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ABSTRACT

This is the second of two studies of Ohio's Head Start programs conducted by the Legislative Office of Education (LOEO) of Ohio. The first study described the implementation of Head Start in Ohio. This study looked at the impact of Head Start's education component by examining urban kindergarten students on selected measures of school readiness. LOEO's primary evaluation method was a case study of 1,230 kindergarten students who attended Dayton Public Schools in the 1996-97 school year. Former Head Start students were compared with those who had been in a Title I Preschool and those whose preschool experiences were unknown. The students were compared on selected school readiness measures: literacy readiness, social competency, and attendance rates. Results showed that: (1) kindergarten students who had been in Head Start did no better on any of the school readiness measures than students whose preschool experiences were unknown; (2) the Head Start group had significantly lower scores than the Title I Preschool group on four of seven scales measuring literacy readiness; and (3) the Head Start group had significantly lower ratings of social competency than the Title I group. Observation of 17 randomly selected Head Start classrooms and interviews with teachers revealed that: (1) classrooms are well-organized and caring environments, providing a variety of learning experiences; (2) areas of weakness include less emphasis on critical thinking, problem solving, and language and writing skills; (3) most kindergarten teachers hold low expectations about the need for specific early reading and math skills; and (4) in general, there is little consensus among or between Head Start and kindergarten teachers about the academic expectations that should be held for early learning. LOEO concludes that Head Start has the capacity to ensure that children are prepared to be successful in school, but that it needs to place a higher priority on literacy readiness and capitalize on opportunities already available in Head Start classrooms. (EV)

Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students

LEGISLATIVE OFFICE OF EDUCATION OVERSIGHT
Columbus, Ohio
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The Legislative Office of Education Oversight (LOEO) serves as staff to the Legislative Committee on Education Oversight. Created by the Ohio General Assembly in 1989, the Office evaluates education-related activities funded by the state. Using a case study approach, this LOEO report examines Head Start's impact by comparing former Head Start participants to other kindergarten students on selected measures of school readiness. These measures assess a subset of Head Start's multiple goals for children and families. *Conclusions and recommendation in this report are those of the LOEO staff and do not necessarily reflect the views of the Committee or its members.*

LOEO appreciates the cooperation of the Dayton Public Schools and the Dayton-area Head Start agencies who provided data for this study. Without their assistance, the study would not have been possible.

This report is available at LOEO's web site: http://www.loeo.state.oh.us.

SUMMARY

Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students

Background

This is the second of two studies of Ohio's Head Start programs conducted by the Legislative Office of Education Oversight (LOEO). The first study described the implementation of Head Start in Ohio. This study looks at the impact of Head Start's education component by examining urban kindergarten students on selected measures of school readiness.

This second study of Ohio Head Start examines the program's impact on kindergarten students.

Among the purposes of Head Start programs is helping prepare children to be successful in school. Such experiences are especially important in offsetting the negative effects of poverty for Head Start children. Head Start provides a wide range of services to young children and their families. These include medical, dental, nutritional, mental health, social, and educational services.

Between 1990 and 1999, over $1.1 billion in federal funding and $484 million in state dollars have been allocated to support Ohio's Head Start programs. Ohio's level of state support is the highest in the nation.

Since 1990, over $1.5 billion in federal and state dollars have been allocated to Ohio's Head Start programs.

Over the next few years, new federal standards will require Head Start agencies to assess outcomes for children in addition to reporting on program operations. In addition, the General Assembly has required the Ohio Department of Education (ODE) to document evidence of Head Start's impact.

LOEO Findings

School Readiness Measures

LOEO's primary evaluation method was a case study of 1,230 kindergarten students who attended Dayton Public Schools in the 1996-1997 school year. We compared former Head Start students with those who had been in a Title I Preschool and those whose preschool experiences were unknown. The students were compared on selected school readiness measures: literacy readiness - seven scales representing important precursor skills to reading, writing, speaking, and listening; social competency - teachers' ratings of children's ability to get along well in the social context of schools and classrooms; and attendance rates during the kindergarten year. We found that:

- ✓ Kindergarten students who have been in Head Start do no better on any of the selected school readiness measures than students whose preschool experiences are unknown.

One of Head Start's multiple goals is ensuring that children are ready for school. This study looks at scores on selected measures of school readiness.

- ✓ The Head Start group has significantly lower scores than Title I Preschool group on four of seven scales measuring literacy readiness.
- ✓ The Head Start group has significantly lower ratings of social competency than the Title I Preschool group.

Classroom Observations and Teacher Interviews

LOEO observed 17 randomly selected Head Start classrooms and interviewed eight Head Start and 12 kindergarten teachers. We found that:

- ✓ The Head Start classrooms are well-organized and caring environments, providing a variety of learning experiences for children.
- ✓ Areas of weakness in the Head Start classrooms include less emphasis on critical thinking, problem solving, and language and writing skills.
- ✓ Most kindergarten teachers hold low expectations about the need for specific early reading and math skills.
- ✓ In general, there is little consensus among or between Head Start and kindergarten teachers about the academic expectations that should be held for early childhood learning.

Head Start children do no better on selected measures of school readiness than children who did not have Head Start.

LOEO Interpretations and Conclusions

This study provides important findings about the impact of Head Start in Ohio on selected measures of school readiness. However, the findings must be interpreted in terms of the study's limitations: this was a case study, involving children from only one urban area in Ohio; poverty data were not available on individual students, so an indirect measure of poverty assigned to a student's home ZIP code was used; and, there were no baseline measures to determine the ability levels of Head Start students before their preschool experience.

Regardless of the study limitations, these findings provide valid indicators of Head Start's impact on the selected measures of school readiness. LOEO believes that measures like literacy readiness, social competency ratings, and attendance rates reflect appropriate and important goals for any Head Start program.

The Head Start community does not give high priority to the cognitive and language skills children need to succeed in school.

Foremost, we question whether there is enough clarity and consensus about school readiness goals, particularly goals that focus on the cognitive and language abilities necessary for success in school. From LOEO's involvement in studying Ohio's Head Start programs for over two years, we believe that the Head Start community is unclear about the priority it should give to these cognitive and language goals.

LOEO concludes that Head Start has the capacity to ensure that children are prepared to be successful in school. It needs to place higher priority on literacy readiness and capitalize on opportunities already available in the Head Start classrooms.

Head Start has the capacity to achieve school readiness goals. It needs to capitalize on opportunities already available in Head Start classrooms.

Recommendations

Overall, LOEO recommends increased emphasis in preparing children to be successful in school. In doing so, LOEO acknowledges the soundness of Head Start's developmentally appropriate practices. For example, we would not encourage practices that ask three and four year olds to sit still and focus on flash cards or worksheets. We accept that they must learn through movement, play, and manipulating objects and ideas that have meaning to them.

Based on these findings, LOEO offers recommendations in four areas.

ODE Leadership and Technical Assistance

Head Start agencies can benefit from assistance from ODE as they develop the capacities to ensure that Head Start children are ready for school.

LOEO recommends:

- The Ohio Department of Education use its set-aside funds to help Head Start agencies better teach children the cognitive, language, and social skills necessary for school success.

ODE can provide leadership and ensure that Head Start agencies receive needed technical assistance and staff development.

School Readiness Demonstration Sites

Head Start will need to adopt a new mindset and new practices to help children develop the readiness skills to be successful in school. With ODE's assistance, some Ohio Head Start agencies could provide leadership by developing best practices and serving as demonstration and learning sites for others. Since this is consistent with the U.S. Department of Health and Human Services' current initiative to focus on outcome measures, ODE's federal counterparts could support Ohio's efforts by giving relief from some of the regulatory and compliance burden placed on Head Start agencies.

LOEO recommends:

- The Ohio Department of Education negotiate with the Administration for Children, Youth and Families of the U.S. Department of Health and Human Services to use selected Ohio Head Start agencies as School Readiness Demonstration Sites, including providing some regulatory relief.

General Assembly Updates and Oversight

It will not be easy for ODE and Head Start agencies to establish and maintain school readiness goals as a priority. There will always be competing agendas and multiple demands. If a school readiness mindset is to be sustained, it is important that the General Assembly be kept informed of the progress and the obstacles that ODE and Head Start agencies may face.

LOEO recommends:

- The Ohio Department of Education submit an annual report to the leadership of the General Assembly and to the Legislative Committee on Education Oversight describing the progress of incorporating school readiness practices, standards, and measures into Head Start's educational programs.

The General Assembly should require progress reports from ODE and help remove obstacles to evaluation.

Reducing Obstacles to Evaluation

In this study, it was difficult to obtain data on individual students and only indirect data were available as poverty measures. In order to answer policy questions about the effects of state-supported programs such as Head Start on student achievement, it is necessary to have data to track the progress of individual students. However, these data do not have to be "personally identifiable." It is also important to have good indicators of poverty in order to account for the effect that poverty has on achievement. In Ohio, state policy governing the Education Management Information System (EMIS) prohibits access to individual data, and federal policy prohibits access to poverty measures on individual students. Region Five of the U.S. Department of Agriculture controls access to data on free and reduced lunch - a useful poverty measure. Other federal regional offices provide these data for legitimate research studies.

LOEO recommends:

- The EMIS be modified so that data can be made available on individual students without the data being personally identifiable.
- ODE and the General Assembly negotiate with Region Five of the U.S. Department of Agriculture to change their policy regarding use of free and reduced lunch data.

HEAD START'S IMPACT ON SCHOOL READINESS IN OHIO: A CASE STUDY OF KINDERGARTEN STUDENTS

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CHAPTER I

INTRODUCTION

This is the second of two studies of Ohio's Head Start programs conducted by the Legislative Office of Education Oversight (LOEO). The first study described the implementation of Head Start in Ohio. This study looks at the impact of Head Start's education component by examining urban kindergarten students on selected measures of school readiness.

Among the purposes of Head Start is helping prepare children to be successful in school. In Head Start preschools, children learn about themselves and the world around them. They learn to conceptually organize what they learn and to express what they know. Preschool activities provide stimulation and learning experiences that assist in a child's natural growth and development. Such experiences are especially important in offsetting the negative effects of poverty for Head Start children.

Background

Begun in 1965 as part of the federal effort to fight poverty, Head Start provides a wide range of services to three and four year old children and their families. These include medical, dental, nutritional, mental health, social, and educational services.

Between 1990 and 1999, over $1.1 billion in federal funding and $484 million in state dollars have been allocated to support Ohio's Head Start programs. Ohio's level of state support is the highest in the nation. Yet, like all states, the federal dollars provide the bulk of support and establish the direction and standards for Head Start. Exhibit 1 shows the pattern of state and federal funding and the number of children served. Combining state and federal dollars, LOEO estimates the per-child Head Start cost at $4,700.

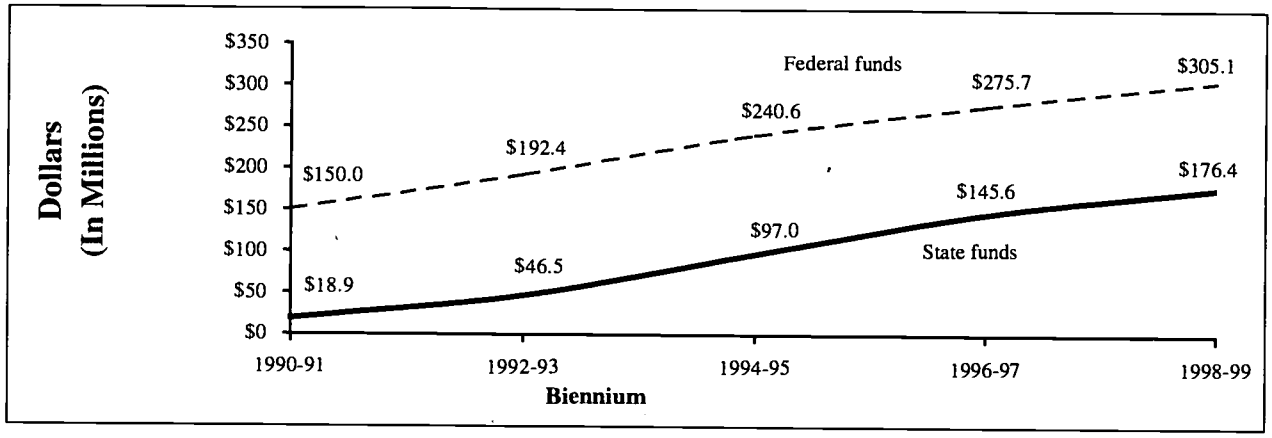
Increasing the number of children in Head Start has been an important state strategy for accomplishing the first national education goal: *all children will enter school ready to learn.* Ohio's governor has initiated efforts to provide quality preschool education opportunities for all children in poverty.

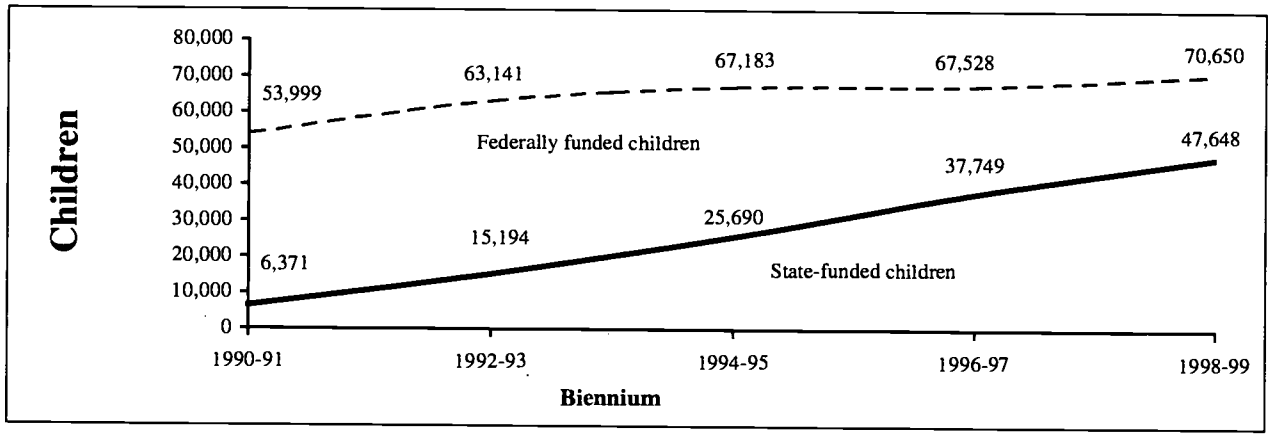
Given the investment of state dollars and the continuing expansion of the state Head Start program, the Ohio General Assembly required in the 1995 Amended Substitute House Bill 117 that LOEO examine the implementation and impact of Head Start programs in Ohio.

LOEO completed a study of the implementation of Head Start in April 1997. In that report we described the Head Start program and assessed its structure, funding, and operation. We also synthesized the findings from 16 research reports of Head Start and other preschool programs for disadvantaged children frequently cited by early childhood experts. Overall, these studies demonstrate that quality Head Start programs are effective.

In this study, LOEO examines the impact of Head Start on preparing children for school.

Exhibit 1
Support of Head Start in Ohio:
Federal and State Funding and Children Served
1990-1999





Note: 1998-99 federal figures are estimates using 1996-97 levels.

State and federal efforts to assess impact

Several of the recommendations from LOEO's implementation study relate to the need for better evidence of impact. LOEO recommended that the Ohio General Assembly require the Ohio Department of Education (ODE) to:

- obtain impact data from Ohio's Head Start agencies; and
- develop and use a common instrument for evaluating program impact on children and families.

ODE also has an ongoing responsibility to determine the developmental progress of Head Start children and report on the findings.

At the national level, the federal agency that administers the Head Start program (U.S. Department of Health and Human Services) is increasing its emphasis on program impact. New federal standards are being developed that require Head Start to move from a focus on process to a focus on outcomes in order to assess the quality and effectiveness of programs operated by Head Start agencies. Over the next several years, measurements will be developed to assess the following performance indicators:

- emergent literacy, numeracy, and language skills;
- general cognitive skills;
- gross and fine motor skills;
- positive attitudes toward learning;
- social behavior and emotional well-being; and
- physical health.

In the meantime, Ohio has the opportunity to provide leadership in developing outcome standards and ways to measure them. This LOEO study provides preliminary impact evidence for Ohio policy makers about the effects of Head Start on several measures of school readiness.

Focus of the impact study

As noted, Head Start provides multiple services for children and their families, one of which is education. In its previous study, LOEO found that only 40% of Head Start funds were allocated to the education component. The remaining 60% supported components such as administration, facilities, transportation, and social services. Exhibit 2 shows fiscal year 1996 expenditures for Head Start components in Ohio.

The overall goal of Head Start's education component is to help children *gain the skills and confidence to succeed in their present environment and with later responsibilities in school and in life.*

Although all of Head Start's activities can be interpreted as contributing to a child's readiness for school, this study focuses on some very specific aspects of school readiness, namely, the precursor skills needed for future literacy, the child's competence in classroom social situations, and the rate of attendance during kindergarten.

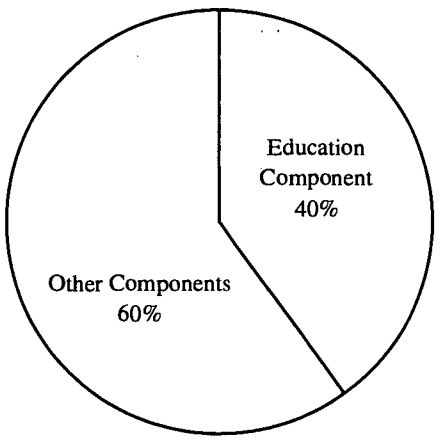
LOEO acknowledges that the aspects of school readiness we measured are only a portion of the activities that go on in Head Start classrooms. Examples of other important Head Start goals include children's emotional growth and creative and artistic expressions.

This impact study addresses the following question about the education component of Head Start:

How do kindergarten students who have participated in Head Start compare to non-participants on selected school readiness measures?

To more fully understand the activities and context that define school readiness for Head Start, LOEO also observed typical practices used in Head Start classrooms and interviewed teachers from Head Start and public schools about their expectations for school readiness.

Exhibit 2
Proportions of Funding Allocated to Education and Other Components of Head Start Programs in Ohio (FY 1996)



Other components include:

- Facilities
- Administration
- Transportation
- Social Services
- Nutrition
- Health
- Disability Services
- Parent Involvement

Methods

LOEO's primary method was a case study of kindergarten students who attended Dayton Public Schools during the 1996-1997 school year. Useable data were available on 1,230 kindergarten students.

LOEO was limited to assessing impact in only one school district because Ohio schools do not uniformly collect school readiness data, nor do they systematically document the preschool experiences of entering kindergarten students.

The Dayton school district provided a unique opportunity to study impact because it tests students in seven areas of literacy readiness as they enter and complete kindergarten. Connecting these test scores to the students' different preschool experiences provides useful information about Head Start's impact. Approximately one-third of the students included in this study had participated in Head Start the year before entering kindergarten.

To conduct this study, LOEO:

- Compared former Head Start students to other kindergarten students on a battery of tests related to literacy readiness;
- Compared former Head Start students to other kindergarten students on social competency as rated by randomly selected kindergarten teachers;
- Compared former Head Start and other students on kindergarten attendance rates;
- Observed and rated 17 randomly selected Head Start classrooms across three Dayton-area Head Start agencies;
- Interviewed eight Head Start and 12 kindergarten teachers in Dayton about their expectations of school readiness; and
- Convened focus group meetings with Head Start and kindergarten teachers, Head Start administrators, and Ohio Department of Education staff to respond to LOEO's preliminary findings.

Appendix A provides a more detailed description of LOEO's methodology. Appendix B provides a selected bibliography.

Limitations of the study

As with any study, there are limitations. Three principal limitations should be considered when reading this report:

1) Case study. The students in this study are only from the Dayton area, therefore the results may not apply as fully to other settings that are less urban, with less poverty, and with fewer non-white students. However, it is important to note that over 70% of Ohio's Head Start dollars are allocated throughout the state to urban settings similar to Dayton.

2) Poverty indicators. Poverty has a powerful effect on school readiness, so it is important to know each student's poverty level. When the level of each student's poverty is known, it can be used to statistically adjust the school readiness scores to compensate for the negative effects of poverty.

In this study, we were not able to obtain poverty information on each student. Instead, we had to assign each student the level of poverty that the census reports for the ZIP code where the student lived. This poverty information is indirect and does not fully capture the level of poverty, especially for Head Start students.

3) No baseline measures. This study looks at kindergarten students after they have had their preschool experiences. We do not know the ability levels of the students before they began preschool. Thus, if the Head Start children, for example, were functioning at substantially different levels than other preschoolers, the analyses used in this study were not able to take this into account.

Appendix C provides a more detailed description of the study's strengths and limitations.

Report organization

The next chapter summarizes Head Start's educational practices and defines the school readiness measures used in this study. Chapter III presents the study findings and a final chapter provides LOEO's conclusions and recommendations.

CHAPTER II

SCHOOL READINESS MEASURES

Head Start's school readiness goals address a range of cognitive, social, emotional, and physical abilities for children. This study measures a subset of these goals: seven precursor skills for literacy, ratings of social competency, and kindergarten attendance rates.

The nature of school readiness

School readiness has many dimensions. Elaborating upon the first national education goal, *all children will enter school ready to learn*, the National Education Goals Panel has identified five goals of school readiness:

- physical well being and motor development;
- social and emotional development;
- language usage;
- cognition and general knowledge; and
- positive approaches to learning.

Head Start addresses these five dimensions of school readiness through its multidimensional approach to helping children and their families. Through nutrition and health services, social services, and parental support, Head Start attempts to provide much of what children need to enter school. These services are *in addition* to what goes on in Head Start classrooms and represent 60% of the program's expenditures.

As noted, 40% of Head Start's expenditures are devoted to its education component. Head Start teachers address the various dimensions of school readiness by arranging for experiences in the classroom and on the playground that fit the natural actions of young children. During a typical half day class, teachers integrate activities that foster the emotional, social, physical, and cognitive development of the children.

Appendix D elaborates upon school readiness and describes how it is approached in the early childhood classroom.

Measures of school readiness used in this study

Head Start agencies must comply with a variety of federal performance standards that address such areas as child health and safety, family and community partnerships, and education and early childhood development.

The following excerpts from the 1996 Head Start *Performance Standards* pertain to outcomes for education and child development. The outcomes noted in *italics* are the broad areas that LOEO measured in this study.

1) Support the child's social and emotional development by:
- building trust;
- fostering *independence*;
- encouraging *self-control*;
- encouraging *respect for the feelings and rights of others*; and
- supporting health and well being.

2) Provide for the development of each child's cognitive and language skills by:
- promoting *interaction and language use* among children and between children and adults;
- supporting *emerging literacy* and numeracy development; and
- providing opportunities for creative self-expression through art, music, movement, and dialogue.

3) Promote each child's physical growth by:
- supporting the development of *large muscle skills*; and
- providing guidance for the development of *small motor skills*.

To translate these broad areas into analyzable data, LOEO used the following specific measurements.

Literacy readiness. Tests to measure important precursor skills to reading, writing, speaking, and listening were given to students at the beginning and end of the school year by their kindergarten teachers. Seven scales of literacy readiness were derived from these tests. (See Appendix A for details regarding these tests.) Useable data were available for 1,230 students.

1) Receptive Language: Ability to comprehend spoken words (e.g., a teacher asks the child to pick out the picture of the fence from a set of four pictures.)

2) Expressive Language: Ability to explain ideas using spoken words (e.g., adult shows the child a picture and says, "Tell me what the clown is doing.")

3) Auditory Memory: Ability to differentiate and remember sounds (e.g., adult tells the child to, "Put two flowers and the doll in the small box.")

4) Visual Memory: Ability to recognize and recall visual symbols (e.g., adult arranges squares and triangles on a surface, then rearranges them. The child is asked to put them back in the original arrangement.)

5) Visual Discrimination: Ability to differentiate forms and symbols (e.g., the child is asked to draw the shapes she is shown, such as squares, triangles, and intersecting lines.)

6) Fine Motor: Ability to perform small muscle movements (e.g., stringing beads).

7) Gross Motor: Ability to control and manipulate large muscles (e.g., skipping or tossing objects in a basket).

Social competency. Using the *California Preschool Social Competency Scale*, 41 randomly selected Dayton kindergarten teachers rated their students at the end of the kindergarten year on the child's ability to get along well in the social context of schools and classrooms. Data were available on 602 students. The 30 items rated such behaviors as:

- following instructions;
- getting along with others;
- dealing with frustrations;
- expressing needs;
- adapting to changes;
- independence; and
- staying on task.

Attendance rate. The percent of school days in attendance during the kindergarten year was computed for 1,230 students.

CHAPTER III

SCHOOL READINESS FINDINGS

Kindergarten students who have been in Head Start do no better on selected school readiness measures than students whose preschool experiences are unknown. The Head Start students have lower scores than Title I Preschool students on four of seven scales measuring precursor skills for literacy and on ratings of social competency. LOEO concludes that these findings reflect low priorities given to these school readiness goals by the Head Start community.

The primary question of this study is how former Head Start students compare to other kindergarten students on selected measures of school readiness. Specifically, LOEO asked:

> *Given differences in gender, race, and levels of poverty, are there statistically significant differences that can be attributed to Head Start on selected measures of school readiness:*
>
> - *seven scales of literacy readiness;*
> - *ratings of social competency; and*
> - *attendance in kindergarten?*

Characteristics of students

Preschool experiences. LOEO classified the kindergarten students into one of three comparison groups. The number of students with useable scores on literacy readiness tests are noted in parentheses.

- Head Start: students who participated in Dayton-area Head Start programs before entering kindergarten (N=452). Only students receiving at least 80% of the Head Start program were included in the analyses.
- Title I Preschool: students who participated in the Dayton Public School's Title I Preschool program before entering kindergarten (N=261).
- Unknown Preschool: students whose preschool experiences were not known (N=517).

The "unknown" group are kindergarten students who we know did not participate in Dayton-area Head Starts or DPS Title I Preschool. Since Ohio schools are not required to collect information on children's preschool experience, we do not know if they had any preschool. As a result, we classified them as "Unknown Preschool." However, similar to 83% of all Dayton elementary students, most of these students are poor and therefore we assume they did not have access to preschool at parental expense.

A comparison of the Title I Preschool program and Head Start is provided in Exhibit 3. It describes how the two programs are the same or different on important characteristics.

Exhibit 3
Comparison of Title I Preschool and Head Start Characteristics

	Title I Preschool	Head Start
Income requirements	Most are poor, but no specific poverty level required for participation	Below federal poverty threshold ($15,600 for family of four in 1996)
Teacher qualifications	Bachelor degree with appropriate early childhood or primary certification	Child Development Associate certificate (usually 1 year of training); no degree requirement
Years spent in program and child's age	One year (as four year old)	Typically, one year (as four year old)
Days per year	145-150 days per year	130-135 days per year
Hours per day	2½ hours	Typically, 3 ½ hours
Setting	In regular classroom in Dayton elementary school	Usually in non-school facility operated by Head Start agency
Services for parents and families	Limited	Extensive

Demographics. Gender and race are considered in order to determine if these characteristics influence levels of school readiness.

The students' race is classified as either white or African American because other racial and ethnic groups comprised only 2.6% of all Dayton kindergarten students and were not included in the analyses.

Across the three comparison groups, the percent of males and females is roughly equivalent, with slightly more females in Title I Preschool. The racial composition of the groups is different. The Unknown Preschool group has nearly twice the percent of white students as the Head Start group.

Exhibit 4 provides a breakdown of students by gender and race for each comparison group.

Exhibit 4
Demographic Characteristics of Three Comparison Groups

		Gender		Race	
		Male	Female	White	African American
Head Start	(N = 452)	51%	49%	21%	79%
Title I Preschool	(N = 261)	46%	54%	32%	68%
Unknown Preschool	(N = 517)	50%	50%	39%	61%

Poverty. Because poverty data were not available on individual students, we assigned each student a poverty indicator based on the percentage of households below the poverty threshold in his or her ZIP code. Although most of the students in the study were poor, there were differences in poverty among the three comparison groups, as shown in Exhibit 5.

Head Start students have higher poverty levels than the Title I and Unknown Preschool students. Within each group, the level of poverty differed considerably by race, with African American students having substantially higher levels of poverty.

To put these figures in context, the federal poverty threshold for a family of four in 1996 was $15,600.

Exhibit 5
Percent of Poverty by Race for Three Comparison Groups

	Percent of Households below Poverty Threshold		
	All Students	**White**	**African American**
Head Start	30%	25%	32%
Title I Preschool	26%	19%	30%
Unknown Preschool	26%	21%	29%

* State average = 12.5% of households below poverty threshold (1990 census)

Kindergarten students excluded from the analysis

LOEO excluded students who did not have a complete set of pre and post test scores and students who participated in other DPS preschool programs in such small numbers that no comparisons could be made. For example, we excluded 33 children who participated in a Montessori preschool and 48 who participated in a Public School Preschool. We also excluded special education students. The vast majority of students in Dayton are either white or African American. As noted, the remaining 2.6% from other racial and ethnic groups were not included because the group sizes were too small for analysis.

Findings on selected measures of school readiness

The primary question for this study is whether Head Start makes a difference on selected measures of school readiness in kindergarten. However, the school readiness measures are affected not just by the students' preschool experiences, but also by gender, race, and poverty level.

LOEO found that these characteristics made noticeable differences on several school readiness measures. For example, girls have higher scores on most of the literacy readiness measures and on social competency ratings. White students have higher scores on receptive and expressive language and African American students have higher scores on measures of gross motor skills. The level of poverty has a negative effect on all of the literacy readiness scales except for gross motor skills.

Because of the differences due to gender, race, and poverty levels, it was important to use statistical techniques to control for these differences. The statistical techniques removed the influence contributed by gender, race, and poverty to the school readiness scores. The resulting "adjusted" scores reflect the influence from the students' preschool experiences, not their gender, race, or poverty level.

With these adjustments, LOEO was then able to rule out influences, other than the effects of the preschool experiences, on the school readiness measures.

These adjusted scores are displayed in the following exhibits for each comparison group. Differences between comparison groups that are statistically significant are noted on the exhibits with footnotes. Statistical significance means that a difference of this size is at least 95% likely to be "true," and not just due to chance.

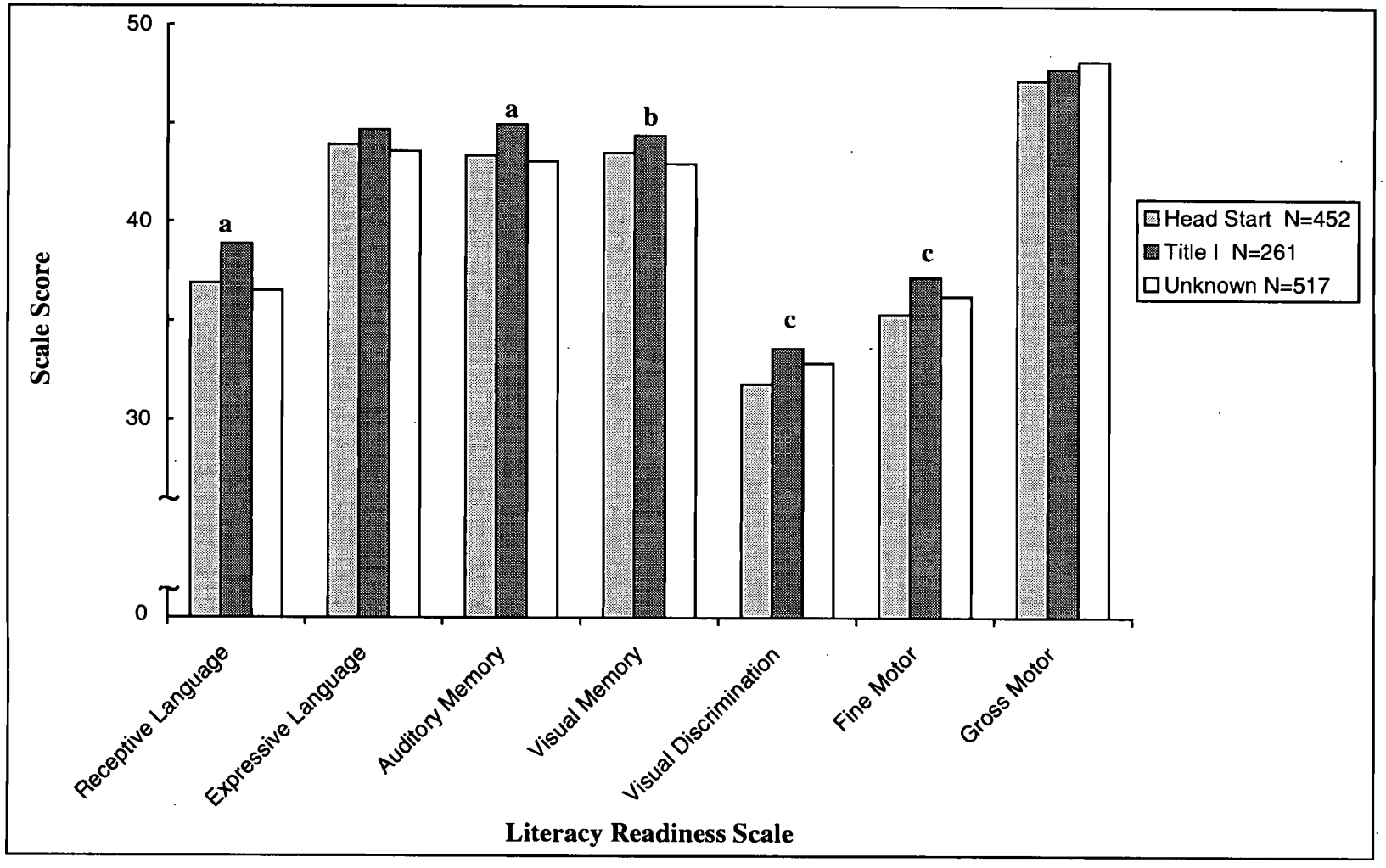
Literacy readiness. Exhibit 6 compares the three groups on seven scales of literacy readiness, measured at the beginning of the kindergarten year.

There are statistically significant differences for the higher Title I Preschool scores over the Head Start scores on four scales (Receptive Language, Auditory Memory, Visual Discrimination, and Fine Motor).

There are no statistically significant differences between Head Start and the Unknown Preschool group on any of the seven scales.

These findings indicate that the Head Start students do not have higher literacy readiness than kindergarten students whose preschool experiences were unknown. Moreover, the findings show that the Title I Preschool group has higher literacy readiness scores than the Head Start group on four of the seven measures.

Exhibit 6
Comparing Head Start to Title I and Unknown Preschool:
Seven Measures of Literacy Readiness



Statistically significant differences:
a: Title I Preschool has significantly higher scores than Head Start and Unknown Preschool
b: Title I Preschool has significantly higher scores than Unknown Preschool
c: Title I Preschool has significantly higher scores than Head Start

Social competency. Exhibit 7 displays the average ratings of social competency for the three groups at the end of the kindergarten year.

The results show that the overall social competency ratings for the Title I Preschool group were higher than for the Head Start group. This difference was statistically significant.

There was not a significant difference between the Head Start and the Unknown Preschool group. Nor was there a significant difference between the Title I Preschool and the Unknown Preschool group.

These findings show that at the end of the kindergarten year, teachers' ratings of social competency for Head Start children were no higher than for the children whose preschool experiences were unknown and were lower than those for Title I Preschool children.

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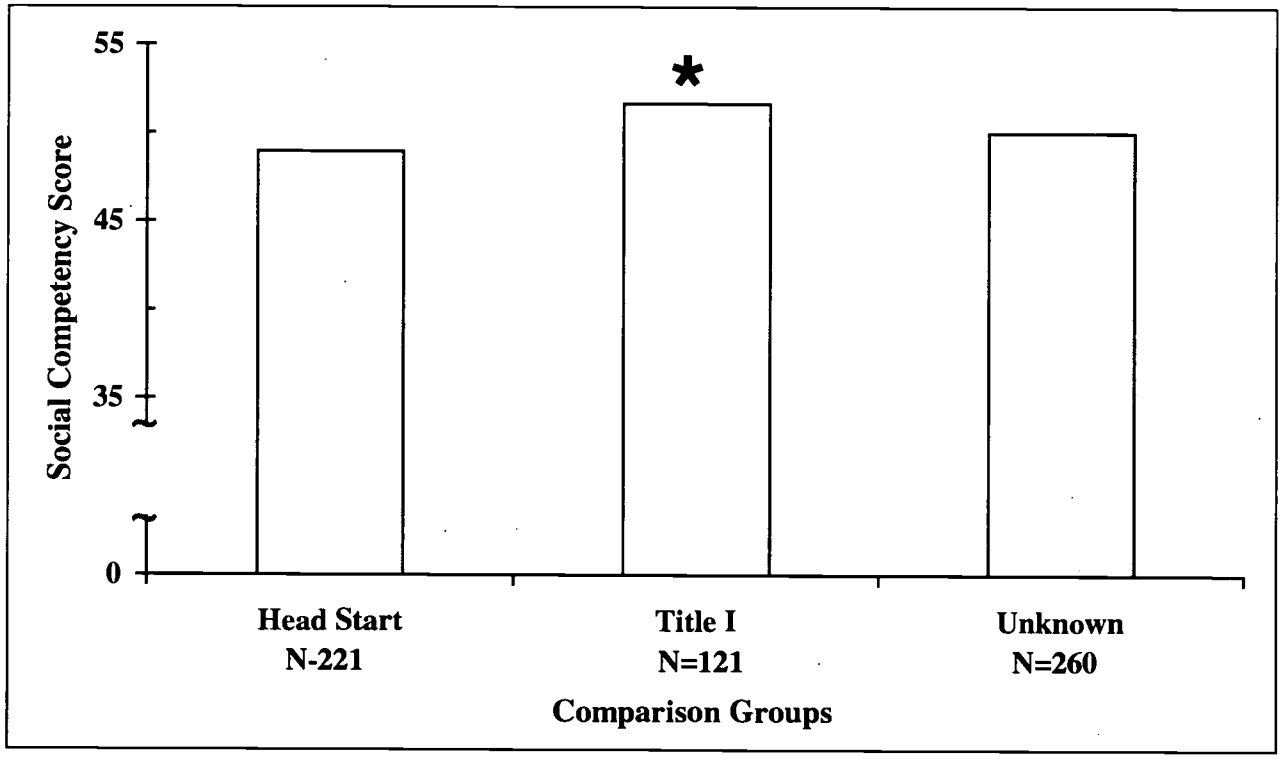
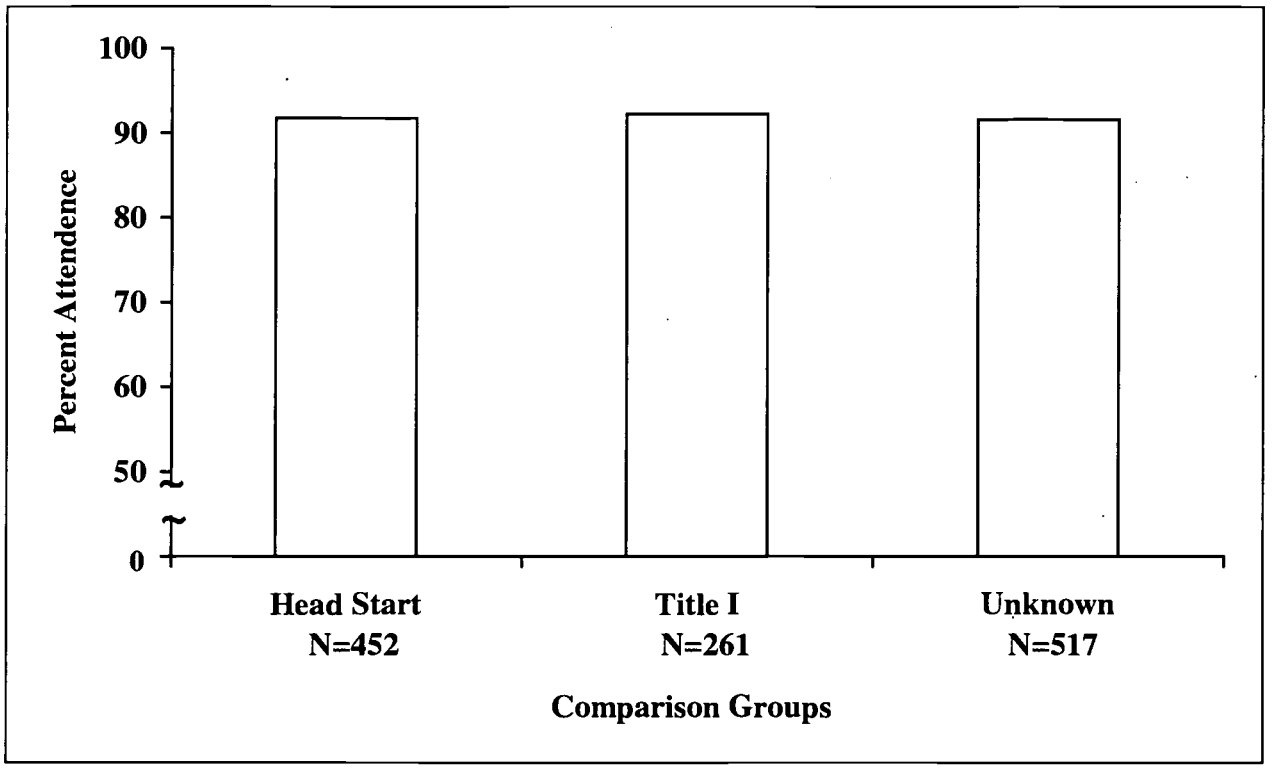
Exhibit 7
Comparing Head Start to Title I and Unknown Preschool:
Social Competency Ratings



* Title I Preschool has significantly higher scores than Head Start.

Attendance. Exhibit 8 displays a final indicator of school readiness: attendance. Here, the attendance rates were essentially the same for all three groups, indicating no significant differences among the three groups.

Exhibit 8
Comparing Head Start to Title I and Unknown Preschool:
Kindergarten Attendance



Classroom observations and teacher interviews

In addition to analyzing these selected school readiness measures, LOEO conducted observations of randomly selected Head Start classrooms, interviewed Head Start and kindergarten teachers, and had ongoing discussions with members of the early childhood community about their expectations for school readiness.

Detailed findings from these observations and conversations are reported in Appendix E. They can be summarized as follows:

- The Head Start classrooms are well-organized and caring environments, providing a variety of learning experiences for the children.
- Areas of weakness in the Head Start classrooms include less emphasis on critical thinking, problem solving, and language and writing skills.
- Most of the kindergarten teachers hold low expectations about the need for specific early reading and math skills.
- In general, there is little consensus among or between Head Start and kindergarten teachers about the academic expectations that should be held for early childhood learning experiences.

Summary of school readiness findings

LOEO examined the data from the school readiness measures using dozens of statistical approaches and different comparisons. (See Appendix A for a description of each of the statistical analyses.)

All of these analyses support the conclusion that the kindergarten children who participated in Head Start had no better scores on the selected school readiness measures than students whose preschool experiences were unknown.

Further, in general the Head Start children had lower school readiness scores than children who participated in the Dayton Public School Title I Preschool program.

In addition, the classroom observations indicate a lesser emphasis in particular curriculum areas, and the interviews indicate no clear academic expectations for children.

Interpretation of findings

LOEO shared the preliminary findings of this study with different members of the early childhood community, asking the question, "How might one interpret these findings?" These discussions can be summarized in three different viewpoints:

1) The selected school readiness outcomes measured here are inappropriate and unrealistic for Head Start;
2) The case study is too limited to accept the findings; or
3) These findings are generally sound and can be accepted.

Viewpoint one. LOEO does not agree with the first interpretation. We believe the school readiness outcomes measured in this study are appropriate and realistic for Head Start.

LOEO acknowledges the multiple goals Head Start holds for children and families and recognizes that its education component is but one of the program's several important goals.

Further, within the education component there are several interrelated and appropriate goals for children. These goals extend beyond literacy readiness and social competency. Within the area of school readiness, we know that the specific abilities measured in this study are but a few among many that evaluators might assess.

However, LOEO believes that the abilities we measured in this study are appropriate and important indicators of school readiness. They are consistent with the federal initiatives for early childhood education and school readiness. Children must be prepared to learn to read, write, speak, and listen effectively (literacy readiness); be able to interact effectively in the classroom and school setting (social competency); and come to school on a regular basis (attendance).

These outcomes should be expected of all quality preschools and are reasonable and appropriate expectations for Head Start.

Viewpoint two. LOEO does not agree with the second interpretation (that the case study is too limited to accept the findings). We acknowledge the limitations noted earlier. However, we do not believe these limitations invalidate the findings. The sample of students in this study is large. The Dayton area is typical of many urban areas in Ohio. Over 70% of Head Start's state dollars are targeted to urban areas.

The fact that a very large majority of the students in the Dayton Public Schools is poor makes it unlikely that the Head Start students were compared to dissimilar students. In addition, LOEO used several statistical techniques to adjust for differences in poverty.

Viewpoint three. LOEO's interpretation of these findings is that they are sound and can be accepted. We further note that there is no clear priority about school readiness

goals within the Head Start community. It is LOEO's view that Head Start has the wherewithal to prepare children for school success if it took full advantage of the opportunities afforded in Head Start classrooms. We question, however, whether there is enough clarity and consensus about the goals for school readiness to do so.

It is noteworthy that the Title I Preschool students had higher scores than the Head Start students on several of the literacy readiness scales. They also had higher ratings on social competency. This is especially pertinent because Head Start advocates claim social competency is a central emphasis of the education component. We wonder what characteristics of the Title I preschool experience contribute to the higher school readiness scores?

LOEO's observations of the Head Start classrooms confirmed that sound, developmentally appropriate practices were taking place. However, when LOEO saw shortcomings, they usually were because teachers missed opportunities to explore ideas, to demonstrate sequential steps for carrying out an activity, and to model writing by recording children's spoken words. Teachers could have been more encouraging of children's attempts at writing, problem-solving, and resolving disagreements.

The Head Start community and the public schools, particularly kindergarten teachers, do not always agree on which practices and curriculum are necessary and developmentally appropriate. Head Start teachers do not always agree with each other; the same is true of kindergarten teachers.

To some Head Start educators, an emphasis on "pre-academic" skills is inappropriate for any preschool experience. Similarly, others claim that school readiness is not a goal for Head Start because schools should become ready for children, not vice versa.

LOEO has had dozens of conversations and interviews with Head Start administrators, teachers, and education coordinators during this impact study, as well as during our previous implementation study. From all of these interactions, it is evident that the Head Start community is unclear about the priority it gives to school readiness skills.

Only recently has the federal Head Start program begun to focus on outcome measures to determine program effectiveness. For many, compliance with federal process standards has been sufficient to accept the adequacy of preschool practices. The "social competency" rubric often suffices as an encompassing slogan for all that Head Start does in its educational component.

Comparison to previous studies

The findings in this report differ from the pattern of findings about Head Start's impact summarized in LOEO's earlier report. In that report, we concluded that other studies conducted over the last 30 years generally reported positive effects for Head Start children. Although those studies used somewhat different measures than ours and were conducted over three different decades, there is no ready explanation for the differences in the findings. It may be that Head Start faces even more challenges in meeting the needs of today's poor, urban children than it has had to face in the past.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Head Start has the capacity to ensure that children are prepared to be successful in school. It needs to place higher priority on literacy readiness and capitalize on opportunities already available in the Head Start classrooms. LOEO recommends that ODE take several steps to focus on specific school readiness goals for Head Start children in Ohio.

Head Start is a comprehensive program with multiple goals for children and families. We recognize that the broad goal of "school readiness" encompasses many aspects of children's physical, emotional, and nutritional health, as well as the support of their families. While not questioning the merit of Head Start's multiple goals, LOEO's study focused on the program's impact on the specific goals of preparing children for the cognitive, language, and social demands of school. The findings from this study suggest that Head Start is not achieving these goals.

As Ohio enters its second decade of providing substantial state support for Head Start, this is an appropriate juncture for Head Start to focus its priorities. As the federal government develops outcome measures over the next few years, Ohio has the opportunity to provide leadership in defining its school readiness outcomes and developing ways to measure them.

We found that former Head Start children had no better scores than their kindergarten classmates on the precursor skills necessary for future literacy and social competency. Findings from our classroom observations show that the typical Head Start classroom provides an environment suitable for achieving these skills. However, we question whether Head Start teachers take full advantage of the opportunities to help children learn such skills. In fact, we question whether the prevailing mindset of the Head Start community embraces these skills as critical to the child's future success. There is not a concerted effort and high priority among Head Start educators to focus on the skills necessary to be successful in meeting the cognitive and language demands of schools.

In recommending an increased emphasis for these school readiness priorities, LOEO acknowledges the soundness of Head Start's approach to preschool education. In calling for increased attention to literacy readiness, we endorse Head Start's developmentally appropriate practices. We call for more emphasis on cognitive and language readiness skills through approaches that are appropriate to the developmental level and needs of young children. Certainly, we would not encourage practices that ask three and four-year olds to sit still and focus on flash cards or worksheets. We accept that they must learn through movement, play, and manipulating objects and ideas that have meaning to them. We acknowledge the need for a mixture of teacher-directed and child-selected activities.

Based on the findings of this study, LOEO offers recommendations in four areas.

ODE Leadership and Technical Assistance

Head Start agencies can benefit from assistance as they develop the capacities to ensure that Head Start children are ready for school. Head Start teachers may not be as well trained as necessary; they may not have access to the best practices for ensuring school readiness skills; they are likely to need curricula, software, expert assistance, and staff development opportunities; and they are not likely to have good

connections with their counterparts in the early grades of public schools. If Ohio Head Start agencies are to give serious attention to school readiness goals, these and other challenges should be addressed.

LOEO recommends:

- **The Ohio Department of Education use its set-aside funds to help Head Start agencies better teach children the cognitive, language, and social skills necessary for school success.**

Strategies that ODE could use to accomplish this goal include:

- Convene regional and statewide training conferences that focus on school readiness issues.
- Require K-3 schools receiving Disadvantaged Pupil Impact Aid (DPIA) funds to establish on-going contacts with Head Start teachers, focusing on issues such as shared expectations for Head Start children, ways to ensure each child's early success in school, and how Head Start and public schools can work together to realize these expectations.
- Establish the pre-kindergarten associate certificate (issued under section 3301.51 of the Revised Code) as the minimum requirement for all Head Start lead teachers. There would be substantial costs to establish this requirement. As Ohio satisfies its goal of serving all eligible children, new state funds could be directed to improving quality by investing in teacher preparation and staff development.
- Encourage early childhood professional associations and teacher preparation institutions to develop pre- and in-service training that emphasizes school readiness objectives.
- Where feasible, use ODE's facility inspection staff to provide technical assistance for Head Start classroom teachers. Recent changes in law have given ODE the responsibility to inspect all of Ohio's licensed preschool programs. These inspectors and other professional staff under contract to ODE's Division of Early Childhood Education could provide technical assistance regarding school readiness procedures.
- Collaborate with Ohio's Family and Children First and the Ohio Head Start Association in bringing awareness and energy to a statewide agenda advocating school readiness goals for preschool programs.
- Prepare ODE policy documents that describe strategies to ensure that literacy readiness and other cognitive and social skills are priorities for Head Start.

School Readiness Demonstration Sites

Head Start will need to adopt a new mindset and new practices to help children develop the readiness skills to be successful in school. With ODE's assistance, some Ohio Head Start agencies could provide leadership by developing best practices and serve as demonstration and learning sites for others. Since this is consistent with the U.S. Department of Health and Human Services current initiative to focus more on outcome measures, ODE's federal counterparts, including the Region Five office, should support Ohio's efforts by giving relief from some of the regulatory and compliance burden placed on

Head Start agencies. ODE has the opportunity to capitalize on the offers of federal-state cooperation and partnership exchanged during last year's meetings between Ohio legislators and federal Head Start officials.

LOEO recommends:

- **The Ohio Department of Education negotiate with the Administration for Children, Youth and Families of the U.S. Department of Health and Human Services to use selected Ohio Head Start agencies as School Readiness Demonstration Sites, including providing some regulatory relief.**

The purpose of these demonstration sites is to refine existing and to create new school readiness practices focusing on the cognitive and social skills expected for school success, especially the precursor abilities for literacy. Competitively selected, the demonstration sites would work with the Ohio Department of Education to develop standards, curricular approaches, teacher qualifications, training agendas, and common assessment tools. Each Head Start program could be given considerable latitude in establishing classroom arrangements and schedules appropriate for achieving school readiness goals for their unique local situation. To the extent reasonable, they should be exempt from many of the federal compliance requirements.

General Assembly Updates and Oversight

It will not be easy for ODE and Head Start agencies to establish and maintain school readiness goals as a priority. There will always be competing agendas and multiple demands. If a school readiness mindset is to be sustained, it is important that the General Assembly be kept informed of the progress and the obstacles that ODE and Head Start agencies may face.

LOEO recommends:

- **The Ohio Department of Education submit an annual report to the leadership of the General Assembly and to the Legislative Committee on Education Oversight describing the progress of incorporating school readiness outcomes, practices, and measures into Head Start educational programs. At a minimum, the ODE report should provide answers to these questions:**

1) What progress have Head Start agencies made in giving increased priority to school readiness goals?
2) What are the obstacles preventing Head Start agencies from teaching the appropriate school readiness skills to their children?
3) What progress has been made in obtaining cooperation from regional and federal Head Start officials?
4) What progress has been made by ODE in providing statewide leadership, strategic planning, and technical assistance to Head Start agencies in addressing and advocating school readiness issues?
5) What empirical measures are in place to show that Head Start is producing positive effects for children?

Reducing Obstacles to Evaluation

In this study, it was difficult to obtain data on individual students and only indirect data were available as poverty measures. In order to answer policy questions about the effects of state-supported programs such as Head Start on student achievement, it is necessary to have individual data to track the progress of students. However, these data do not have to be "personally identifiable." It is also important to have good indicators of poverty in order to account for the effect poverty has on achievement.

In Ohio, state policy governing the Education Management Information System (EMIS) prohibits access to individual data, and federal policy prohibits access to poverty measures on individual students. Region Five of the U.S. Department of Agriculture controls access to data on free and reduced lunch - a useful poverty measure. Other federal regional offices provide these data for legitimate research studies.

LOEO recommends:

- **The EMIS be modified so that data can be made available on individual students without the data being personally identifiable.**
- **ODE and the General Assembly negotiate with Region Five of the U.S. Department of Agriculture to change its policy regarding use of free and reduced lunch data.**

APPENDICES

APPENDIX A

METHODOLOGY, SUMMARY STATISTICS, AND ADDITIONAL ANALYSES

Overall Study Design

This LOEO study of Ohio Head Start uses a quasi-experimental, post hoc design to examine selected measures of school readiness among kindergarten students in Dayton Public Schools (DPS) during the 1996-97 school year. The students are classified into three groups based on their preschool experiences before entering kindergarten: Head Start, Title I Preschool, and Unknown Preschool. These comparison groups comprise the categories for the independent variable of group membership.

The dependent variables are selected school readiness measures of literacy readiness, social competency, and attendance. Using a General Linear Model approach, analyses included analysis of variance (ANOVA), and analysis of variance with covariates (ANCOVA) for examining the main effects of the preschool experiences while controlling for the contributions of other variables that include gender, race, poverty, pretest scores, and extent of participation in kindergarten and Head Start. These analyses produced adjusted average (least square mean) scores for the dependent variables.

Study Methods

The methods used in this study are broken down into eight steps.

Step 1: Deciding on study focus. Among all of Head Start's goals, LOEO selected measures within the area of school readiness. We felt that indicators of school readiness were important and appropriate because of the legislative expectation that a Head Start program produces a "head start" on school readiness.

Step 2: Determining feasibility of a Dayton case study. The principal considerations in selecting Dayton for the case study were these:

- Dayton Public Schools (DPS) conduct an extensive kindergarten testing program that provides indicators of success in school. In Dayton, this program is entitled "Early Intervention for School Success" (EISS). This program is renamed, but modeled after a national program called the "Early Prevention of School Failure" (EPSF). Students with low scores on these indicators are seen as being at high risk of not acquiring the reading and writing skills necessary to be successful throughout school and life. If students' scores are below certain levels, the schools use different interventions to help those students. These measures are collected by DPS at the beginning and the end of the kindergarten year. (These are not tests used to screen students for kindergarten). The EISS tests are administered by DPS kindergarten teachers. As a component of its EISS program, DPS personnel have received training in the administration of the tests. LOEO was able to access the test database for all kindergarten students. The Dayton tests produced standardized, age-normed scores for each child on precursor abilities for literacy.

- Kindergarten attendance provided an additional measure of school readiness available from the DPS database.

- The three Dayton-area Head Start agencies agreed to provide information necessary to anonymously identify and code kindergarten students as having participated in Head Start. This identification was essential to conduct the study. Public schools in Ohio do not maintain files that record whether a student participated in any preschool experience, including Head Start. About one third of the Dayton kindergarten students in 1996-97 were identified as having participated in Head Start the previous year.

- Over 70% of the state dollars supporting Head Start programs in Ohio is allocated to urban settings such as Dayton.

- Dayton's poverty and racial mix is typical of Ohio's urban settings.

Step 3: Obtaining data from Head Start agencies and Dayton Public Schools. Electronic files were obtained for all of the kindergarten students from the 1996-97 school year in Dayton Public Schools. The files contained student demographic data, attendance rates, and the school readiness test scores from the fall and spring testing periods. They were merged with files from the Head Start agencies to create a unique, anonymous code for each child. The files permitted comparisons of Head Start to non-Head Start children on the school readiness indicators.

Step 4: Making observations and ratings of Dayton-area Head Start classrooms. It was important to know if the Head Start agencies in the Dayton area used appropriate educational practices in their preschool classrooms. Across the three Dayton-area Head Start agencies, we randomly selected 17 Head Start classrooms for detailed observations. Using the *Assessment Profile for Early Childhood Programs,* LOEO observed and rated classrooms on their adequacy in providing appropriate:

- Learning environments and materials conducive to early childhood learning.
- Scheduling of diverse activities.
- Curriculum and teaching techniques to facilitate learning and developmentally appropriate practices.
- Interactions between teachers and children.
- Individualizing to the needs and developmental level of each child.

Step 5: Obtaining teacher ratings on "social competency." Head Start early childhood educators see social competency at the heart of Head Start's experiences for children. Because the other school readiness measures do not directly include social competency, LOEO arranged for teacher ratings of social competency. We randomly selected about one half of the Dayton kindergarten teachers (N=41) to administer an instrument entitled the *California Preschool Social Competency Scale.* This 30-item scale assesses the types of attitudes and interactions considered appropriate for success in the classroom and school environment. The ratings were made in the spring of 1997. The social competency measures permitted comparisons between former Head Start participants and other kindergarten students.

Step 6: Conducting analyses to examine differences across comparison groups. Using a General Linear Model approach, statistical analyses were conducted to determine if children who had participated in Head Start had different scores on the school readiness measures than the other

kindergarten students, while controlling for the contributions of other variables such as poverty, gender, race, and extent of participation in kindergarten.

Step 7: Seeking reactions to initial findings. Meetings were held with Head Start and kindergarten teachers in the Dayton area to review the preliminary findings. Also providing their reactions to the preliminary findings were administrators from the three Dayton-area Head Start agencies and representatives from ODE and the Ohio Head Start Association. LOEO conducted several additional analyses following these meetings. The main purpose of the additional analyses was to reexamine the data to ensure that the effects of poverty were controlled for as fully as possible.

Step 8: Report preparation and review. Opportunities to comment on earlier versions of this report were provided to the Dayton-area Head Start agencies, Dayton Public Schools, the Ohio Head Start Association, Ohio Family and Children First, and the Early Childhood Division of the Ohio Department of Education.

Description of Study Variables

Independent Variables

- Head Start participants. These are students who attended three Dayton-area Head Start agencies the year prior to being kindergarten students in DPS during the 1996-97 school year. Usable data were available for 452 former Head Start students.

- Title I Preschool participants. These students participated in the DPS Title I Preschool the year prior to their attendance as 1996-97 kindergarten students in DPS. Usable data were available for a total of 261 former Title I Preschool students.

- Unknown Preschool participation. Other than not having been Dayton-area Head Start or Title I students, no information was available on the preschool experiences of these kindergarten students. Usable data were available for a total of 517 students classified as "Unknown Preschool."

Dependent Variables

- Literacy readiness measures. Seven scales of precursor abilities for literacy were derived from five tests given to DPS kindergarten students in the fall and spring of the 1996-97 school year. Exhibit A provides the list of these tests, their subscales, and the formulas by which the seven scales are derived from the tests. The scale scores are age-normed and standardized as T-scores (Mean = 50, SD = 10). Both pretest and gain scores were analyzed. The seven scales:

    1) Receptive Language
    2) Expressive Language
    3) Auditory Memory
    4) Visual Memory
    5) Visual Discrimination
    6) Fine Motor
    7) Gross Motor

- Social Competency. The *California Preschool Social Competency Scale* (CPSCS) was used to assess social competency. It consists of 30 items with four response options, yielding a raw scale score ranging from 30 to 120. DPS kindergarten teachers (N=41) were randomly selected to provide ratings on all their students at the end of the 1996-97 school year. Each teacher's ratings were converted to standardized T-scores within each classroom (Mean = 50, SD = 10). Usable CPSCS scores were available for 602 students. The social competency scale rates behaviors such as:

    - following instructions;
    - getting along with others;
    - dealing with frustrations;
    - expressing needs;
    - adapting to changes;
    - independence; and
    - staying on task.

- Attendance. This measure is the percent of school days in attendance during the kindergarten year. Attendance rates were available for 1,230 students.

Control Variables

Using General Linear Model procedures, adjusted (least square mean) scores for the dependent variables were used to compare differences across the three groups of students. The least square means adjusted for these categorical and continuous variables:

- Categorical.

    Gender: Male or female

    Race: White or African American (only 2.6% of all the kindergarten students was not white or African American and was not included in the analyses)

    Extent of kindergarten: Either full or half-day kindergarten

- Continuous. (covariates)

    Poverty: Each kindergarten student was assigned the percent of poverty for the households in the ZIP code where that student lived (from 1990 census data). This poverty indicator was used as a covariate for the ANCOVA procedures used to examine all of the dependent variables.

    Pretest scores on literacy readiness scales: The fall pretest scores on each of the seven literacy readiness scales were used as covariates to adjust for gain scores. Gain scores were obtained by subtracting spring posttest scores from the fall pretest scores.

Exhibit A
Standardized Tests Given to DPS Kindergarten Students

1) PPVT: Peabody Picture Vocabulary Test

2) VMI: Beery-Buktenica Visual-Motor Integration

3) DAP: Draw A Person Assessment

4) MAS: Motor Activity Scales
   - MAS1: Body imagery and spatial orientation
   - MAS2: Manual dexterity
   - MAS3: Body control

5) PLS: Preschool Language Scales
   - PLS1: Visual vocal integration
   - PLS2: Vocabulary
   - PLS3: Auditory integration response
   - PLS4: Integrative auditory memory
   - PLS5: Discriminative visual-auditory memory

Formulas for Conversions to Literacy Readiness Scales

Literacy readiness scale	**Derived from**
Receptive Language	.9 PPVT + .1 MAS1
Expressive Language	.4 PLS1 + .4 PLS2 + .2 PLS4
Auditory Memory	.8 PLS3 + .2 PLS4
Visual Memory	.6 PLS5 + .1 VMI + .3 DAP
Visual Discrimination	.8 VMI + .2 PLS5
Fine Motor	.6 VMI + .3DAP + .1 MAS2
Gross Motor	1.0 MAS3

Summary Statistics

Exhibits B to J provide summary statistics showing the unadjusted means, standard deviations, and the adjusted (least square) means for the three comparison groups on each of the dependent variables: the pretest and gain scores for the seven literacy readiness scales, social competency, and attendance.

Exhibit B
Summary statistics: Receptive Language

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	34.8	9.4	36.9
	Gains	11.2	9.8	11.5
Title I (N = 261)	Pretests	38.1	9.9	38.8
	Gains	10.3	8.7	11.6
Unknown (N = 517)	Pretests	36.0	10.6	36.5
	Gains	10.6	10.1	10.9

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.02	P=.60	P=.00
Gains	P=.89	P=.31	P=.27

Exhibit C
Summary statistics: Expressive Language

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	42.9	7.4	43.5
	Gains	12.7	8.2	12.7
Title I (N = 261)	Pretests	44.5	7.4	44.7
	Gains	12.4	8.1	13.0
Unknown (N = 517)	Pretests	43.3	8.1	43.5
	Gains	13.1	8.3	13.0

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.08	P=.93	P=.07
Gains	P=.59	P=.55	P=.97

Exhibit D
Summary statistics: Auditory Memory

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	42.7	8.3	43.3
	Gains	12.2	8.7	12.3
Title I (N = 261)	Pretests	45.0	8.3	44.9
	Gains	10.8	8.7	11.6
Unknown (N = 517)	Pretests	43.1	8.6	43.0
	Gains	13.3	9.1	13.0

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.03	P=.65	P=.00
Gains	P=.35	P=.19	P=.02

Exhibit E
Summary statistics: Visual Memory

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	42.7	7.4	43.5
	Gains	11.3	7.7	10.6
Title I (N = 261)	Pretests	44.5	7.1	44.4
	Gains	9.8	7.4	10.4
Unknown (N = 517)	Pretests	43.0	7.8	42.9
	Gains	11.2	8.0	11.0

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.16	P=.31	P=.01
Gains	P=.60	P=.48	P=.22

Exhibit F
Summary statistics: Visual Discrimination

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	31.1	7.5	31.8
	Gains	11.0	8.0	10.1
Title I (N = 261)	Pretests	33.6	8.3	33.6
	Gains	8.6	7.8	9.2
Unknown (N = 517)	Pretests	33.0	8.5	32.8
	Gains	8.9	8.8	9.1

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.01	P=.08	P=.23
Gains	P=.15	P=.06	P=.83

Exhibit G
Summary statistics: Fine Motor

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	34.8	6.8	35.3
	Gains	10.0	7.0	9.1
Title I (N = 261)	Pretests	37.2	7.7	37.2
	Gains	7.6	6.7	8.1
Unknown (N = 517)	Pretests	36.3	7.8	36.2
	Gains	8.6	7.4	8.6

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.00	P=.10	P=.10
Gains	P=.11	P=.37	P=.34

Exhibit H
Summary statistics: Gross Motor

Group comparisons on pretest and gain scores				
Comparison Groups		**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	Pretests	48.5	10.2	47.2
	Gains	8.5	10.3	8.4
Title I (N = 261)	Pretests	48.2	10.4	47.8
	Gains	9.2	9.7	9.0
Unknown (N = 517)	Pretests	48.3	10.8	48.2
	Gains	9.1	10.6	8.9

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
Pretest	P=.52	P=.21	P=.65
Gains	P=.32	P=.29	P=.91

Exhibit I
Summary statistics: Social Competence

Group comparisons on social competency rating			
Comparison Groups	**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 221)	48.8	9.7	48.9
Title I (N = 121)	51.7	9.9	51.7
Unknown (N = 260)	50.0	9.6	50.0

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
	P=.02	P=.27	P=.12

Exhibit J
Summary statistics: Attendance

Group comparisons on percent attendance			
Comparison Groups	**Unadjusted Mean**	**Standard Deviation**	**Adjusted Mean**
Head Start (N = 452)	92.1	7.2	91.7
Title I (N = 261)	92.3	8.1	92.2
Unknown (N = 517)	91.8	7.6	91.6

Post hoc comparisons: Probabilities of differences for adjusted (least square) means			
Comparison Groups	**Head Start & Title I**	**Head Start & Unknown**	**Title I & Unknown**
	P=.45	P=.78	P=.28

Additional Analyses

Additional analyses were conducted to see if there were other ways in which Head Start participation might make a difference. These analyses included:

- Factor analysis for social competency scale. We explored factors within the social competency scale and examined the factors by comparison groups. The same pattern of differences was found for each of the factors: Title I Preschool was higher than Head Start, and Head Start and Unknown Preschool were equivalent.

- Item comparisons on the social competency scale. The three groups were compared on each of the 30 items of the social competency scale. There were no differences in favor of the Head Start for any of the 30 items.

- Factor analyses of literacy readiness scales. We examined the factor structures across the seven scales and examined these factors by each of the three comparison groups. None of the factors showed Head Start with higher scores.

- Comparisons by standardized tests and subscales. The preschool groups were compared using pretest and gain scores on each of the five standardized tests (and their subscales – a total of 11 scores). No differences in favor of the Head Start group were found from these comparisons.

- Comparison of students from only the "poorest" ZIP codes. We examined all of the dependent variables by preschool group for five of the Dayton ZIP codes that had the highest percent of household poverty and sufficient numbers for analysis. Two of the ZIP codes consisted of nearly all white students with the other three consisting of nearly all African American students. Students in the two "white" ZIP codes were compared to each other by preschool groups. Students in the African American ZIP codes were also compared to each other by preschool groups. Although these analyses by ZIP codes provided "natural controls" for poverty and race, there were no differences that showed Head Start students to have higher scores than their non-Head Start counterparts from the same ZIP codes on any of the dependent variables.

- Comparisons by extent of Head Start. Some of the Head Start students had participated for two years and/or for more than a half day. In looking at the extent of Head Start, we found no differences on any of the dependent variables, except for attendance. The Head Start group with the most exposure to Head Start (students who had two years of Head Start and had participated for full days for at least one of those years) had significantly higher attendance rates than the other Head Start students, the Title I Preschool students, and the Unknown Preschool students.

- Comparisons by extent of kindergarten. About 55% of the kindergarten students included in the study attended full day kindergarten. The remainder attended for half days. We compared these two groups of students and found that there were no differences between the full and half day kindergarten students on any of the dependent variables.

- Comparisons by consolidated pretest and gain scores. We consolidated the seven literacy readiness scales into a single pretest score and a single gain score. No differences were found in favor of Head Start.

- Comparisons by restricted age ranges. We truncated the age distribution (roughly by eliminating the bottom and top deciles) in order to remove the possible effects of age extremes on the dependent variables. These analyses showed no differences in favor of the Head Start group.

- Using different poverty indicators. Five indicators of poverty were considered before selecting "percent of households in poverty" in the students' home ZIP code as the control (covariate) for poverty. The other indicators of poverty were: per capita income by ZIP code; percent of households in ZIP code headed by females; percent poverty level of households headed by females in ZIP code; and percent of poverty reported by Dayton Public Schools for the elementary school attended by the kindergarten students. Factor analyses across these five indicators showed that "percent of households in poverty by ZIP code" was the most consistent and discriminating of the five. There were no differences in the pattern of findings using any of the other four indicators as a separate covariate for poverty.

- Examining poverty using ZIP code as a categorical variable. Although the poverty variable was used as an ordinal covariate for all of the ANCOVA procedures, we tried using only the ZIP code designation, thus converting poverty to a categorical variable to see if more variance might be explained. As a categorical variable, the ZIP codes explained slightly more variance, but did not change the pattern of findings that were found when poverty was used as a covariate.

- Examining subgroup differences and interactions. There were several interesting subgroup differences when examining the dependent variables by gender and race. Two and three-way interactions among race, gender, poverty, and group membership revealed isolated cases where a particular combination of poverty, race, and gender had quite different contributions to the dependent variables than group membership as a whole. However, none of these subgroup interactions changed the general pattern of findings about the effects of preschool experiences.

All of these analyses required the merging of large, complex electronic files from several sources. A consolidated file structure for all the data was developed using SAS® application software. These files are fully documented and available to other researchers. LOEO encourages such inquiries. Also, the files can be made available to Dayton Public Schools as well as Dayton Head Start agencies for continued study of how the students fare as they progress through school.

APPENDIX B

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APPENDIX C

STRENGTHS AND LIMITATIONS

Characteristic of study	Strengths	Limitations
Large sample of Dayton kindergarten students	The sample size of 1,230 students with usable data is a larger number than most similar studies. The sample size is sufficient to conduct appropriate statistical tests with confidence in accepting the findings.	The students in the study were only from the Dayton area. Thus, the results may not apply as fully to other settings, especially settings that differ from this urban setting. The findings are least likely to generalize to rural settings with less overall poverty and fewer non-white students.
Use of existing school readiness tests administered by Dayton Public Schools	The developers of the Dayton testing program estimate that this test battery would cost about $500 per student for all related administration, scoring, and reporting costs. Obtaining these data for over 1200 students at essentially no cost for testing made this study possible. The tests used in Dayton have high validation and reliability. They measure literacy readiness, an important aspect of school readiness in terms of the precursor abilities for reading, writing, speaking, and listening.	Literacy readiness is but one area of overall school readiness and likelihood of school success. For example, other important school readiness indicators, not assessed in this study, include parental support, motivation, self-esteem, math abilities, other cognitive and problem-solving abilities, and overall health.
Testing at the beginning and at the end of the kindergarten year using Early Intervention for School Success tests (EISS)	The pre- and post-testing provides measures for how well prepared the children are before school begins, as well as an indication of their progress during the year. The "pre" measures (at the beginning of kindergarten) are good indicators of a child's school readiness abilities after the Head Start experience.	We had no baseline measures on Head Start participants. Head Start children could have had lower abilities before entering the program than other poor students the same age. However, testing to determine these abilities was not done before the Head Start experience.
Social competency ratings	Because the kindergarten teachers providing these ratings were randomly selected, the measures of social competency are representative of all the Dayton kindergarten students. The scale provides a good measure of the behaviors considered appropriate and important for learning in a school setting.	Head Start advocates claim "Social Competency" encompasses a wide range of attributes. For example, the broad concept of social competency would include the child's physical and emotional health, cognitive abilities, levels of parental knowledge and support, self-esteem, sense of self-efficacy, and positive feelings about school and learning. The measures used in this study are less encompassing than this definition of social competency. In this study, the ratings of social competency provided by kindergarten teachers assess behaviors seen as necessary to be successful in adapting to the expectations of the kindergarten classroom. In addition, because the social competency ratings were obtained only once, at the end of the kindergarten year, they were also influenced by the kindergarten experiences, not just the preschool experiences of the students.

Characteristic of study	Strengths	Limitations
Using census data as the measure of poverty (instead of "free or reduced lunch" designations, which were not available from Dayton Public Schools)	Census data provide reasonably accurate indicators of poverty. They correspond to group differences in predicted ways (e.g. Head Start children with higher poverty than the other children, and whites with less poverty than non-whites). Also, because of the prevalence of poverty in Dayton (estimated by Dayton Public Schools as 83.7% of the elementary students), all but a few of the students would be classified as poor using the "free or reduced" lunch definition.	This indirect measure of poverty may understate poverty for Head Start students. If so, the negative effects of poverty on school readiness may not have been fully taken into account for the Head Start child. Therefore, Head Start children, all of whom are poor, may have somewhat higher scores on the adjusted school readiness measures than reported here.
Analysis techniques, which control for characteristics affecting school readiness	The analysis of variance and covariance procedures used in the study are appropriate and powerful in controlling for variables affecting the school readiness measures. They allow the main effects from the preschool experiences to be determined, while accounting for effects of other variables such as poverty, gender, and race.	These statistical control techniques are used when a true experimental approach cannot be used (e.g. where children would have been randomly assigned to Head Start or some other known preschool experience).
Comparing Head Start to: 1. other kindergarten students known to have had Title I Preschool; or 2. students for whom the preschool experiences were unknown	The comparisons of Head Start with Title I students permit some conclusions to be reached about these two early childhood education programs.	The preschool experiences of the kindergarten students labeled as "unknown" means that some of these students may have had quality preschool experiences. However, since nearly all of the Dayton kindergarten students are poor, it is unlikely that they participated in preschool programs as comprehensive and structured as the Head Start program.
Children from three different Head Start agencies	The three agencies provide a mix of Head Start programs and, therefore, more confidence that the findings are not peculiar to just one Head Start agency.	The study did not include a full spectrum of Head Start agencies in Ohio. However, our classroom observations showed that, in general, these three agencies were using sound practices in their preschool classrooms.

APPENDIX D

SCHOOL READINESS AND THE EARLY CHILDHOOD CLASSROOM

Research has linked children's poverty to being at risk of school failure. Poverty decreases a child's likelihood of having several advantages related to school success, including: frequent and constant exposure to the world of reading, high expectations of classroom teachers, and well-developed language skills.

At the same time, childhood poverty is associated with an increase of problems related to school failure, including family mobility, chronic health problems, low education level of parents, lack of parental involvement in the schools, and low self-esteem.

> "...children who arrive at school with already well-formed, rich 'maps' and natural knowledge that parallel the cultural expectations of the teacher have an enormous advantage over children with more impoverished maps or ones from a culture or with language unfamiliar to the teacher and significant others." (Caine, 1991)

Recent research in brain development suggests that as a child ages, the ease with which critical language and conceptual skills develop diminishes. A child who enters kindergarten lacking particular skills may have missed the "window of opportunity" to develop them without considerable and expensive intervention.

Preschool programs, including Head Start, attempt to prepare children for the transition from home to school. Head Start's multiple activities also attempt to minimize or compensate for some poverty related problems and provide opportunities to learn that could not be created easily later in their life.

What is school readiness?

School readiness has many different dimensions. Elaborating upon the first national education goal, *all children will enter school ready to learn*, the National Education Goals Panel has identified five goals of school readiness:

- Physical well being and motor development: children should be healthy, well fed, and well rested. They should be equally adept at handling a crayon and climbing a jungle gym.
- Social and emotional development: children should engage in secure relationships with adults and be able to play and work with other children.
- Language usage: children should be able to express thoughts and feelings and be able to grasp beginning reading skills, such as understanding that letters represent sounds.
- Cognition and general knowledge: children should know colors and shapes and be familiar with concepts like "hot" and "cold."
- Approaches to learning: children should demonstrate curiosity, creativity, independence, cooperation, self-confidence, and persistence.

How does Head Start address school readiness?

Services outside the classroom. Head Start addresses these five dimensions of school readiness through its multidimensional approach to helping children and their families. Through nutrition and health services, social services, and parental support, Head Start attempts to provide much of what children need to enter school. These services are all *in addition* to what goes on in Head Start classrooms and represent 60% of the program's expenditures.

Classroom activities. Services inside the classroom represent 40% of the program's expenditures. A classroom schedule, typical of a Head Start child's half-day is described in the following table. During this time, teachers are integrating activities that foster the emotional, social, physical, and cognitive development of the children.

Head Start Daily Classroom Schedule

Staff Arrives	
Children Arrive	Teachers greet children using positive verbal and non-verbal greetings. Health inspection completed.
A.M. Breakfast	Teachers eat with and talk with children at the table.
Tooth Brushing	Children use their personal toothbrushes.
Planning Time	Children sit in small group with their teacher to make plans for work time. Each child plans verbally, draws, or with other representation. Teachers guide children to areas and activities that meet their individual needs.
Work Time	Teachers support children's work efforts through positive gestures, guidance, problem solving, redirection, and individualized assistance for skill development and language stimulation experiences.
Clean-up Time	Learning centers are set up for children's independent clean up. Children put away toys and materials cooperatively.
Recall Time	Teachers meet with small groups of children to individually recall and review child's plan and activities completed during work time.
Small Group Time	Learning activities are planned for the development of the child's individual growth. Intervention and remediation activities are planned for individual children.
Active Physical Play	Outdoor play provides sunshine, exercise, and fresh air. Children stay indoors only in inclement weather. Sensory motor training activities are provided to develop large and small muscles, and cooperative play.
A.M. Lunch	Teachers eat with and talk with children at the table. Children prepare for food handling by washing hands before eating. Children clear away and clean up their place after eating.
Circle Time	Teachers provide a warm, informal setting to provide closeness while doing stories, songs, finger plays, and creative movement to records.
Departure	Teachers distribute papers and projects to the children and escort class to the bus or release to the parent. Teachers say goodbye to children.

Source: *Parent Handbook, Dayton Public Schools Head Start Program*

Although many activities may appear as "just play" to the unknowing observer, they are intentionally planned by teachers to foster children's development. The following examples illustrate a variety of school readiness activities.

****

Dinosaurs!	Building a Boat
The teacher approaches a table where a student is standing up plastic dinosaurs. The teacher knows that he is having trouble distinguishing among different sizes. They talk about how dinosaurs come in different sizes. She asks him to line up the dinosaur pieces from smallest to biggest. She asks him to hand her the smallest dinosaur, then the biggest dinosaur, then a medium size dinosaur. In the process, he is developing the school readiness skills of: • listening and understanding; • expressing himself with words; • developing relationships with adults; • sorting and classifying; • distinguishing sizes; and • following directions.	During work time, two girls agree to build a boat together out of large blocks. The girls agree to combine their efforts, select blocks, design their boat, experiment with the size and shapes of their building materials, talk other children out of taking away the blocks they need to finish their boat, and choose a captain. In the process, they are working on the social and cognitive school readiness skills of: • listening to and understanding each other; • negotiating; • conflict management (with words, not fists); • building relationships with peers; • counting; • classifying/sorting by size; and • conceptualizing and arranging.

In addition to being multidimensional, the classroom practices described in these examples share many other important characteristics. They are developmentally appropriate, meaningful, and combine teacher and child-directed learning.

These classroom practices are considered "developmentally appropriate" by early childhood educators because they recognize and accommodate the stages of natural development of three- and four-year-old children. There is a predictable pattern of development in children's:

- motor functions (e.g., they crawl before they walk);
- their language (e.g., single words come before sentences);
- their social abilities (e.g., they play along side one another before they play with each other); and
- their intellectual abilities (e.g., they work with concrete objects like beads and clay before they work with abstractions like numbers and letters).

Although these overall stages are predictable, the rate of growth for an individual child is not. Some children accomplish at age three what others are just beginning at four. Moreover, development in one area does not necessarily parallel growth in other areas. The child who loves to climb to the top of the jungle gym on the playground may not be able to say more than a few words to express her ideas. The one who never stops talking may have difficulty identifying shapes and colors.

As a result, Head Start classroom practices need to address both the *common* needs of all children at this age, as well as be tailored to *individual* children. For example, all four-year-olds need to move around; sitting still is not an appropriate expectation for more than a few minutes. Yet they each have individual needs; the teacher may need to encourage one to talk more and get another to pay attention to colors or shapes. Through monthly, weekly, and daily planning, the teacher prepares activities to meet both the common and individual needs of the children.

The creation of meaningful learning activities for children is another important characteristic of quality classrooms. For children to make necessary connections with the knowledge presented to them in preschool, the knowledge must build upon their own previous experiences and result from the integration of a variety of subject matters (math, language, art, etc.).

The dinosaur example shows how the teacher builds upon a child's interest in dinosaurs to illustrate the concept of different sizes. That child can explore the same concept through other activities such as painting different sizes of flowers, building with different sizes of blocks, and listening to stories about big and small animals.

Finally, although all of these activities are teacher-designed and teacher-guided, children learn best when teachers expand upon what children have freely elected to do. Whether it is deciding to build a boat or play with dinosaurs, the child chooses the nature of the activity, but the teacher helps build the connections and guides the learning.

APPENDIX E

CLASSROOM OBSERVATIONS AND TEACHER INTERVIEWS

In order to better understand what happens in Head Start classrooms and the expectations of Head Start and kindergarten teachers regarding school readiness, LOEO observed 17 randomly selected Head Start classrooms. We also interviewed eight Head Start and 12 kindergarten teachers.

Classroom observations

LOEO used the *Assessment Profile For Early Childhood Programs* to observe and assess the practices of these classrooms on five scales. Although arranged differently, these scales closely resemble the dimensions of early childhood professional practice as put forth in guidelines by the National Association for the Education of Young Children (NAEYC). The classroom characteristics are assessed by five scales:

- Learning environment
- Scheduling
- Curriculum
- Interacting
- Individualizing

The typical classroom observed by LOEO was organized, well planned, provided a variety of activities, and allowed children to work at their own pace. Nearly all of the classrooms LOEO observed had a desirable number and variety of manipulatives and materials that were accessible to the children.

A typical classroom was staffed with caring and nurturing people. The Head Start teachers we observed engaged children in conversations, positive verbal interactions, and laughter. The children were cooperating and sharing with each other.

Finally, each child was treated as an individual. A child's abilities were determined so that the teacher could plan specific activities with that child. The teacher was able to accommodate special needs children by modifying activities and providing adequate space and equipment.

However, LOEO observed that in some classrooms certain *Profile* criteria were unmet; these unmet criteria generally occurred within the "curriculum" scale.

Child-directed learning. During designated periods of time, children were allowed to choose from all of the options presented in the room. Many classrooms, however, did not allot the full amount of child-directed time needed to satisfy the *Profile* criteria. In addition, only children in about half of the classrooms had the opportunity to offer suggestions for activities or discussion.

Teacher demonstrations. During teacher-directed activities, the teacher rarely demonstrated an activity in an organized sequence of small steps or explored specific concepts or topics through multiple mediums and processes.

Problem-solving emphasis. Children were given the materials and time necessary to explore a variety of problems. The opportunity was present, although the teachers we observed did not take full advantage of that opportunity. In every classroom that LOEO observed, children were asked questions that required them to remember facts (who, what, or when). In fewer classrooms, children were asked open-ended or problem-solving questions (why, how, or what if).

Also missing from many classrooms were invitations by the teacher to compare, solve problems, or predict outcomes. In these classrooms the lack of emphasis on problem solving extended to socio-emotional conflict as well. Children were not prompted or encouraged to resolve disagreements and fights; they were merely separated from each other.

Writing and language. Nearly all of the teachers engaged the children in a variety of language activities such as reading and story telling. Less than half the teachers, however, either encouraged the children's attempts at writing or wrote words that the children dictated to them.

Teacher interviews

LOEO staff interviewed eight teachers from Dayton-area Head Start agencies and 12 kindergarten teachers from Dayton Public Schools. The following statements summarize the main findings from these 20 in-depth interviews.

Kindergarten teachers expect to start from wherever the students are. Both the literature on school readiness and Dayton teachers say that kindergarten teachers expect to teach children from their current developmental level. In Dayton, kindergarten teachers expect or at least hope for basic skills, such as knowing how to follow directions or listen.

"I think they should know the basics. What I include in basics is to know their whole name, their address, telephone number, and their parents' names."

Head Start and kindergarten teachers gave us mixed messages concerning academic skills. Some expect minimal pre-literacy or pre-math skills, such as knowing a shape or a color or a few letters; others do not.

One teacher's hope: "Children will be able to put four or five words together to complete a thought, know their first and last names, know the difference between color and shape, and know that their names are represented by letters. A lot of kids don't have any of these things."

Kindergarten and Head Start teachers have varying opinions of Head Start's role in preparing children for kindergarten. Some teachers feel that Head Start focuses too much on academic skills; but others feel that Head Start needs to provide children with a higher level of academic skills. Still others feel that Title I and other preschools focus more on academic skills than does Head Start.

Preschool experiences make a difference. Although Dayton kindergarten teachers do not necessarily know if a particular student has been in Head Start, they say there is a difference between children with preschool experiences and those without. Kindergarten teachers state that children with preschool experiences generally have social skills and are "happy learners." They display trust in the teacher and are not afraid of school. Said one teacher:

"I can definitely tell a difference between those children who were in preschool and those not. ...those who were in preschool come with the social skills and knowledge to succeed . . . a lot more kids, who were not in preschool, were put in front of TV for 5 years -- and they were not watching Sesame Street."

Kindergarten teachers value Head Start, but see its limitations. Although as a whole Dayton kindergarten teachers see Head Start in a positive light, they recognize that it is not a panacea for all the challenges that poverty brings. One kindergarten teacher summarized:

"I think Head Start is a help, but it will take more than one program to cover the bases to catch them up. But still, it is more than one step in the right direction. Without it, we are lost. The non-Head Start children were so much lower [in skill levels] than the ones from my other [suburban] district. When they come in to kindergarten with social or developmental skills at a 2-year 3-month level, there is only so far you can bring them."

Summary of observation and interview findings

In short:

- The Head Start classrooms are well-organized and caring environments providing a variety of learning experiences for the children.
- Areas of weakness in the Head Start classrooms include less emphasis on critical thinking, problem solving, and language and writing skills.
- Many kindergarten teachers hold low expectations about the need for specific early reading and math skills.
- In general, there is little consensus among or between Head Start and kindergarten teachers about the expectations that should be held for early childhood learning experiences.

COMMENTS

Committee Comments

- Senator Robert A. Gardner
- Senator Merle Grace Kearns
- Representative J. Donald Mottley
- Representative C.J. Prentiss

Agency Comments

- Ohio Department of Education
- Ohio Head Start Association, Inc.

LOEO Response

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Committees:
Education, Vice Chairman
Energy, Natural Resources & Environment
State & Local Government & Veterans' Affairs
Ways & Means

Ohio Senate
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Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students
May 28, 1998

Comments from Senator Robert A. Gardner

The research staff members of the Legislative Office of Education Oversight (LOEO) are to be commended for their work on this case study. At a time when the General Assembly is placing a strong emphasis on increasing academic achievement, it is important to have good data that tells us what expectations we should realistically hold. Although the scope of this case study was limited (i.e. only one urban area's students participated in the study, and no baseline measures), the results were similar to other, more comprehensive longitudinal studies that looked at similar issues.

New research using tools such as brain imaging technologies have provided us with dramatic advancement in neuroscience on the developing brain. The Carnegie Task Force on learning in the Primary Grades stated in 1996 that "A growing body of research shows that when children do not get a good start in the early years, later remediation becomes much more difficult and costly."

This, coupled with Ohio's competency-based and proficiency testing, the fourth grade "reading guarantee" and higher academic standards compels us to direct our focus to teaching and learning in those early critical periods in a child's life when specific types of learning takes place.

We have arrived at the hour of decisions that effect our young citizens who are just beginning their lives and learning. "Research has consistently shown that high quality child care and early education can boost children's chances for later success in school. Poor school performance is foreshadowed by below-average performance on measures of cognitive and social functioning during the preschool years." Ramey, C.T. and S.L. Ramey 1996.

Serving: Ashtabula and Lake Counties

While I concur with the philosophy that schools should be ready for students, we have an opportunity to make a difference in children's lives through early education in developmentally appropriate environments. We can capitalize on those critical periods when specific learning takes place if we provide this population with the best possible services.

One glaring distinction in the LOEO's report is the difference in credentials of the children enrolled in Head Start and Title I preschools. In Ohio, we mandate under the Rules for Preschool Programs, Chapter 3301-37-03 that teachers in public preschool programs have, at a minimum a valid Prekindergarten teaching certificate. In addition, teachers serving children with disabilities, in programs operated by public schools and county boards of mental retardation and developmental disabilities, must hold as a minimum a valid Ohio special education or prekindergarten teacher's certificate with validation in early education of handicapped children. The Head Start population, by contrast, can be served by personnel with a CDA.

The questions must then be asked; "why would we put the most at-risk children in classrooms with the least trained teachers?" In fairness, can we expect a person with one year of training to know how to teach critical thinking, problem solving, and language and writing skills, all vital preparation for Ohio's proficiency and competency testing? Therefore, I am in complete agreement with the LOEO recommendation to establish the pre-kindergarten associate certificate as the minimum requirement for all Head Start lead teachers. It is time to raise the benchmark.

Also of major concern to me is the statement in LOEO's findings on whether the prevailing mindset of the Head Start community truly embraces precursor skills necessary for future literacy and social competency. While the equality of the Components of Head Start are sound in theory and based on needs of children of the 1960's, the children of the next millennium face a much changed world filled with tremendous technological advances which demand stronger social and literacy skills than ever before.

LOEO's recommendation to develop pilot sites for developing best practices and serving as demonstration and learning sites for others will push education to the forefront and make it the primary-focus component.

In closing, I found the study to be very informative. It is imperative that we work to develop pre-kindergarten programs that provide at-risk children with the resources they need to develop and excel once they enter kindergarten and the primary school grades. I look forward to continuing the dialogue regarding early childhood education.

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Ohio Senate
10th District

June 2, 1998

Nancy C. Zajano, Ph.D.
Director, Legislative Office of Education Oversight
77 S. High St, 22nd Floor
Columbus, OH 43266

Dear Dr. Zajano:

Thank you for meeting with me to discuss my thoughts regarding areas of clarification needed, in my view, for the Legislative Office of Education Oversight (LOEO) Head Start report as presented on May 19, 1998.

Since that conversation I have also received the LOEO letter of May 28, 1998, which addresses concerns raised at the May 19th, 1998 meeting and the methodology and rationale used by LOEO to determine procedures used in the report. I have found this May 28, 1998 letter to be most thorough and, indeed, it does address some of my concerns as well. I recommend that this letter be included in the final report.

Briefly, then, I repeat my issues for purposes of the final report. Because the report used just one area, the City of Dayton School System, I think it imperative that the report address up front the reasons why Dayton was chosen.

In the summary, the example used in the first paragraph of the recommendations stands alone and has no frame of reference. I recommend instead that developmentally appropriate activities be cited.

The danger inherent in an executive summary is that that is often the only part that is read. The background information and methodology contained in the appendix is often ignored, to the detriment of the study. Both executive summary and text of report should explain the basis for using retrospective information and the validity of doing same.

In instances where the reasoning was circular, I recommend that there be an effort to document or cite the appendix section that undergirds the finding.

Thank you for your attention to these remarks.

Sincerely,

Merle Kearns

MERLE GRACE KEARNS
MAJORITY WHIP
OHIO SENATE
10TH DISTRICT

MGK:d

cc: Representative Randy Gardner

Ohio House of Representatives

J. DONALD MOTTLEY
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Comments by State Representative J. Donald Mottley to LOEO Report: "Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students"

June 2, 1998

The LOEO analysis provides some evidence that the Title I Preschool model may be more effective than the Head Start model in improving school readiness. But this study fails to show convincingly, despite contrary claims in the text of the report, that Head Start has no impact on school readiness. Data inadequacies make it impossible to support such conclusions. As I said in committee, "no matter how much we torture the data, it cannot tell us what it does not know." The report's conclusion that Head Start participants are not more ready for school than those with unknown preschool backgrounds is not sufficiently supported, for the following reasons:

1. The conclusion is contrary to the results of other studies, utilizing a similar or superior methodology. As noted in Chapter 1, page 1, of the present report, "overall, these studies demonstrated that quality Head Start programs are effective." The report itself, on page 16, admits that "there is no ready explanation for the

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differences in the findings".

2. The initial school readiness of Head Start students versus those of unknown preschool background is not known. As noted on page 4 of the report, "This study looks at kindergarten students after they have had their preschool experiences. We do not know the ability levels of the students before they began preschool. Thus, if the Head Start children, for example, were functioning at substantially different levels than other preschoolers, the analysis used in these studies were not able to take this into account." This limitation is discussed at greater length below.

3. There is reason to believe that the poverty measurers chosen understated the relative poverty of Head Start students. Correcting for this effect would lead to the conclusion that Head Start students perform better than those of unknown preschool background. As noted in Appendix C, page 2 of the report, under "Limitations," "This indirect measure of poverty may understate poverty for Head Start students....Head Start students, all of whom are poor, may have somewhat higher scores on the adjusted school readiness measurers than reported here." This is also discussed in further detail below.

Lack of Information About Initial Conditions.

To evaluate the impact of Head Start versus having no preschool experience on school readiness, we must be able to compare the performance of an experiential group (students who have participated in Head Start) with that of a control group (those who did not participate in such a program). If the experimental and control

groups are identical in all respects except for the presence or absence of the Head Start "treatment," we may use the relative performance of the two groups as evidence of effects of that "treatment." To the extent that the experimental and control groups are not identical, however, the difference in where students finish may be due to differences of how they started. By analogy, the fastest runner will win a race only if all runners started at the same place at the same time. Not knowing whether all the competitors started at the same place and at the same time, we do not know whether the first person across the finish line is the fastest runner!

Lack of information about initial conditions is an admitted limitation of this report (see page 4, "No Base Line Measures"). In the absence of such information, the researchers understandably have tried to estimate the initial conditions indirectly, using an estimate of the students poverty level as the primary predictor of initial performance. While this is the best that a researcher can do when confronted with the lack of data about initial conditions, it does weaken support for the conclusions of the report. This weakness is compounded by the use of what may be an inaccurate relative poverty measure test to estimate the "initial conditions" of Head Start children. The less accurate is our measure of the variable used to predict the difference in initial conditions, the greater will be our error in estimating initial conditions, and thus the less reliable is any conclusion about the effects of Head Start on student readiness.

Adequacy of Poverty Measure

Since poverty level for individual students is not known, the researchers also were forced to estimate this indirectly - further weakening support for their conclusions. We did know the census track within which the student lived, and the

percentage of household within that census track that are below the poverty level. The percentage of households below the poverty level for the student's census track is used as an index of the individual student's poverty. What is relevant, of course, is the income level of the student's household - not the income level of others in the student's neighborhood. Perhaps census data would have been available for the percentage of households with school age students, or preschool age students, who were below the poverty level. This would have been a better predictor.

From Exhibits 4 and 5 of the report, we can conclude that the average "poverty index" for all students including the study is about 27.5%, compared with an estimate of 83.7% of Dayton elementary students who are below the poverty level. For Head Start, we know that at least 90% of the students are required to be below the federal poverty level (see exhibit 3), while the sample of Head Start students has a "poverty index" of 30%. There obviously is a correlation between community poverty levels and the poverty level of students, but the correlation may be too weak to predict an individual student's poverty level from that of the neighborhood.

Other Aspects of the Report

I agree that further research is necessary and that - if the data inadequacies discussed above can be eliminated in further research - the conclusions of this report about Head Start's impact on school readiness can be bolstered or conclusively refuted. We should pursue that research program.

The report is most convincing in arguing that Head Start - regardless of its current impact - could do an even better job of preparing students for school by

focusing more on certain skills and competencies The classroom observations discussed in the report support this conclusion. The data on Title I versus Head Start students also indicates that students may benefit from applying some aspects of the Title I model - such as more highly trained teachers - to the Head Start program. This is consistent with other research showing that better trained teachers produce better learning.

I thus endorse the recommendations on pages 17 -20 of the report, although I find inadequate support for one of the research findings as discussed in great detail above.

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Select Committee on School Governance

C. J. PRENTISS
State Representative

June 3, 1998

Ms. Nancy C. Zajano, Director
Legislative Office of Education Oversight
77 S. High St., 22 Floor
Columbus, OH 43266-0927

Dear Director Zajano:

Please find enclosed my comments on LOEO's report, *Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students.*

I wish to have these comments included in the released version of the report and appreciate your attention to this request.

Sincerely,

C. J. Prentiss
State Representative
8th District

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Criminal Justice
Legislative Committee on Education Oversight
Select Committee on School Governance

C. J. PRENTISS
State Representative

June 3, 1998

Comments on *Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students*

Submitted by State Rep. C.J. Prentiss, member, Legislative Committee on Education Oversight

I attended the May 19th meeting of the Legislative Committee on Education Oversight and heard the staff presentation of LOEO's *Head Start's Impact on School Readiness in Ohio: A Case Study of Kindergarten Students.*

I made my dissatisfaction with the report known during the presentation and urged my fellow committee members not to release it. I have many concerns regarding what I consider questionable use of data and choice of methodology in this study. It has also come to my attention that the Early Childhood Division of the Ohio Department of Education, among others, share some of my concerns.

I have chosen to comment below on my two primary concerns and wish to encourage readers to carefully consider the results of this study.

1. The LOEO study did not compare Head Start participants with non-participants of equal backgrounds.

In the LOEO's analysis, they estimated only 30% of the Head Start students in the study were below the poverty threshold. This is extremely problematic. Federal law requires 90% of Head Start students be at or below the poverty threshold. LOEO then compared the "school readiness" of Head Start students to groups of kindergarten students of whom only 26% were below the poverty threshold.

It is well established that household income levels affect a child's entry-level ability to learn. This fact is at the heart of the Head Start initiative. Thus, comparing groups of kindergarten students from different backgrounds does not give us any meaningful conclusions about the effectiveness of the Head Start program.

2. The LOEO did not conduct any baseline testing.

Although the LOEO study seeks to compare school readiness scores of different groups of children, they did not collect an initial baseline score of all study-children that is necessary for an evaluation of the effect of Head Start and other pre-kindergarten activity. Without this information we do not know if children's scores at their entrance into kindergarten were the result of a certain program, no program, or unchanged from the prior year.

We would assume that Head Start participants would score much lower than other non-participants before pre-school. The study does not reflect this disparity of economic backgrounds of Head Start participants and non-participants. Instead the LOEO assumes that all study-children would have obtained similar scores on school readiness before any pre-school experience. This problem was the primary reason that I voted to withhold this report for further revision and development.

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State of Ohio
Department of Education
Ohio Departments Building, Room 810, 65 South Front Street, Columbus 43215-4183

John M. Goff
Superintendent of Public Instruction

May 27, 1998

Dr. Nancy Zajano, Director
Ohio General Assembly
Legislative Office of Education Oversight
77 South High Street, 22nd Floor
Columbus, Ohio 43266-0927

Dear Dr. Zajano,

Your efforts to conduct a study on the impact of Head Start are to be commended. Clearly, research that studies the impact of the program on the children enrolled provides needed information for program improvement. We applaud your efforts in this regard.

The emphasis this past decade has been on providing access to services. In fact, Ohio currently leads the country in the number of eligible children and families receiving comprehensive Head Start services. Clearly, the investment has ensured that all eligible children whose families want Head Start services have a placement in this program, but it has also required program providers to focus on recruitment and enrollment of thousands of children and families, finding and educating staff, and locating affordable housing in which to provide services.

Significant numbers of children and families are being served in Head Start in this state. There is certainly a need to measure the impact of this early childhood program, as well as other publicly funded programs, on how well programs prepare children for school success. This study focused on one aspect of the impact of Head Start, using a few measures of school readiness. However, in light of the acknowledged limitations of this one study, I believe it is important to interpret these findings with caution. It is for this reason a detailed response to the LOEO report is attached.

I appreciate the opportunity to comment on this report.

Sincerely,

John Goff

Enclosure

Ohio Department of Education
Comments on Head Start's Impact on School Readiness in Ohio:
A Case Study of Kindergarten Students

In a time where public education is under the microscope, it is important to obtain data that demonstrate the impact of the educational experiences of the children in its system. We are appreciative that this study was conceived in an effort to examine the effects of one of these programs, Head Start.

The Department of Education acknowledges that given the limited staff and extremely short timeline in which to conduct an impact study, the Legislative Office of Education Oversight (LOEO) was under a great deal of pressure to design a study that could be done with the resources allotted. We also acknowledge that we currently have no quantitative data of our own to report the impact that Head Start has had on measures of school readiness. However, the Department of Education does not accept the results reported to be representative of Head Start's impact and believes the conclusions in the report may be spurious given the study's many limitations.

Areas of Exception

The Legislative Office of Education Oversight (LOEO) has conducted a study in one school district, on one set of kindergarten students, given one battery of standardized tests, with one comparison group entitled "children with unknown preschool experiences." In this study the authors acknowledge all of its limitations including the critical poverty measure used to adjust the scores of the children. They acknowledge that they have produced a report with results for which they have "no ready explanation for its findings."

It is, therefore, puzzling why the conclusions are not presented to the reader with a warning to interpret the results with caution, and why the report does not include a recommendation that the study be replicated elsewhere in order to support or refute the current findings. Rather than questioning its own findings because of the method used, LOEO presents its conclusions as "valid indicators of Head Start's impact." Further, the only caveat offered on this research is that it focuses "on selected measures of school success." It is regrettable that Head Start in Ohio may be judged on the basis of this one very limited study.

Although there are many comments and questions that could be offered on this report, three major ones are outlined in this response. We believe that once published there will be experts who will comment on the merits of this study in detail.

Poverty Indicator

There appears to be a significant underestimate of poverty which calls into question the analyses and results reported in this study. Exhibit 3 reports that the income eligibility requirement for Head Start children is that the parents have an income of 100% or below the federal poverty level. In accordance with Head Start Performance Standards, Head Start programs may accept only up to 10% over income eligibility. This would indicate that 90% of the Head Start children would be at the 100% or below level. However, in LOEO's analyses which uses an estimate of poverty within a zip code, a mere 30% of the Head Start children were determined to be at this level of poverty according to Exhibit 5. It was this poverty indicator that determined the extent to which the scores on the school readiness measures should have been adjusted. Not accounting for the difference between the 30% and 90% raises concerns about the methods and the findings.

Assumption of Equivalent Groups

This research seems to assume that the children in the three groups, if tested prior to participating in Head Start, Title 1, or in no other preschool or some other preschool experience (unknown), would have obtained very similar scores on these measures of school readiness. By making the assumption that the children were equivalent, LOEO can conclude that the preschool experience can account for the differences found the following year at entrance to kindergarten.

ODE believes that it is possible, even likely, that there would have been significant differences among the three groups at the onset of the prekindergarten experience, particularly in light of the fact that the Head Start children were "the poorest of poor." However, without baseline data, there is no way to know whether the differences in kindergarten were due to the children in the groups starting at different places or due to the programs or experiences in which they participated.

Teacher Qualifications

It would appear that from the data presented, the hypothesis that teacher qualifications would account for the results obtained was not tested. Yet, LOEO makes the recommendation that Head Start teachers be required to obtain a prekindergarten associate degree. This recommendation has significant fiscal impact and does not seem to flow from this study.

It is possible that other research may suggest staff qualifications make a difference in student performance, but other research also suggests that Head Start has a positive impact on student performance as well as other measures of success.

Areas of Agreement

All of the areas of exception notwithstanding, the Ohio Department of Education has taken steps to obtain outcome data to substantiate progress children make in early childhood education programs and to promote continuous program improvement. Some of these steps were in response to LOEO's implementation study on Head Start, and others were implemented prior to our knowledge of the findings in this report.

Collect preschool information by program type

In response to the previous LOEO report, the Ohio Department of Education, Division of Early Childhood Education, has developed model questionnaires for districts to provide to parents in order to collect preschool experience data. Regional meetings with elementary principals and EMIS coordinators were held in February to inform them about the data collection process and how to enter the data into the Education Management Information System (EMIS).

The Ohio Department of Education, Division of Early Childhood Education, has provided the EMIS software vendors a prototype of the data entry screen and the program will be ready for full implementation in the 1998-1999 school year. A paper data collection method was used this year in several school districts to field test the instrument.

The Ohio Department of Education, Division of Early Childhood Education, will produce reports for like groups of children in like settings on proficiency results, attendance rates, Title I, special education services, and retention/promotion rates. Longitudinal data will be collected and analyzed as it is available. For example, the relationship between the type and intensity of the preschool experience and the fourth grade proficiency test scores will be available in 2003 for the 1998-99 kindergarten classes.

Document preschool children's progress

Through a series of stakeholder meetings, four broad child impact areas have been agreed upon by the Head Start, Public Preschool, and Preschool Special Education communities. We have provided examples of indicators to be assessed for each impact area.

1. Children are able to interact effectively with adults, peers, and the environment

    Children appropriately solve problems in their interactions with peers

    Children show affect appropriate to the social context

2. Children gain and use knowledge

    Children demonstrate understanding of age appropriate information

    Children demonstrate recall of verbal and nonverbal events

    Children understand and use concepts related to early literacy and math skills

    Children solve problems that require reasoning about objects, situations and people

3. Children have an effective system of communication

    Children use gestures, sounds, words, or sentences to convey wants and needs or to express meaning to others

    Children respond to others' communication with appropriate gestures, sounds, words, or sentences

4. Children have effective self-help skills

    Children engage in a range of basic self-help skills including toileting, hygiene, and basic safety identification

    Children meet behavioral expectation for following rules, directions, and routines

The Ohio Department of Education, Division of Early Childhood Education, has selected an assessment tool that will measure a child's developmental level in each of these broad impact areas. For example, the impact area, *children will gain and use knowledge,* will be correlated with the competencies in Ohio Department of Education's model curriculum for Math, Science, Language Arts, and Social Studies.

Formulate and prescribe target levels for critical performance indicators

The following program performance indicators have been selected by the Ohio Department of Education, Division of Early Childhood Education, as critical because of their relationship to positive child outcomes and sound administrative performance.

1. Indicators for staff and children
   - Attendance rates
   - Turnover rates (mobility)
   - Average number of staff hours and dollars spent on staff development activities related to the teaching and learning process
   - Percentage of parents who participate in various program related activities
   - Staff qualifications

2. Indicators for administration
   - Percentage children actually being served the first full week in December (December child count/funded enrollment)
   - Percentage full enrollment by month
   - Percent of budget expended for direct medical or dental treatment or screening
   - Percentage of income eligible children enrolled in Medicaid or Healthy Start
   - Percent fully immunized
   - Percent receiving needed medical treatment *(Head Start and Public School Preschool Only)*
   - Percent receiving needed dental treatment *(Head Start and Public School Preschool Only)*
   - Percent budget returned to GRF each biennium *(Head Start and Public School Preschool Only)*
   - Percent Preschool Grant returned or not requested *(Preschool Special Education Only)*

Baseline data are being collected for 1997-98 and target levels are being established for 1998-99 by the Ohio Department of Education. Data are collected through quarterly reports and verified onsite on a random basis. These data will be used to monitor program progress and provide an early warning system for department intervention.

Provide technical assistance

As a precursor to collecting child and program outcome data, technical papers on Kindergarten and Kindergarten Readiness were disseminated to all early childhood educators including K-3 teachers in public schools. The 1998-99 papers, which are in final edit, will focus on literacy. These will be sent to the same population of educators.

Study groups are being conducted by the early childhood coordinators and ODE personnel. The focus of these on-going study groups is to address issues of school readiness, curriculum and instruction. Participants in these groups include early childhood educators teaching in prekindergarten through third grade classes.

Establish demonstration sites

Seven demonstration sites have been selected that represent different regions of the state and different programs. There will be a team of technical assistance providers assigned to each location. The team consists of nearby state university personnel, Head Start Quality Network regional consultants funded by ODE, Early Childhood specialists located regionally in the Special Education Resource Centers, and ODE staff.

The focus of these sites is on selecting appropriate curriculum, providing appropriate instruction, and achieving results. In the Head Start programs, federally and state funded teachers will participate.

The ODE is working with the Administration for Children, Youth and Families in Region V in an effort to demonstrate a unified commitment to quality.

Summary

It is evident from the strategies the Ohio Department of Education has already implemented, there is a commitment to quality early childhood programs and continuous improvement. It saddens us to have good programs that want to improve be tarnished by the results of one study, especially when the study has so many limitations.

HEAD START ASSOCIATION, INC.
Ohio

May 27, 1998

Jerry Walker
LOEO
77 South High Street, 22nd Floor
Columbus, Ohio 43266-0927

Dear Jerry:

As promised, here is the Ohio Head Start Association response to the "Head Start's Impact on School Readiness in Ohio: *A Case Study of Kindergarten Students*".

If you have any questions, please feel free to call.

Sincerely

Barbara Haxton
Executive Director

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The Ohio Head Start Association is a membership organization and represents the entire Head Start community across the 71 Head Start Grantees and Delegate agencies serving all 88 counties in the state.

After the study was released on May 19 and in order to develop an appropriate response to the LOEO study "Head Start's Impact on School Readiness in Ohio: A case Study of Kindergarten Students", we called together a group of Head Start professionals representing Community Action Head Start programs, private, single and multi-purpose programs, and public school administered programs. The Ohio Urban Resources System and The Ohio Association of Community Action Agencies were represented in the group as well. We requested and received input from the Dayton programs represented in the study and we sought and received input from researchers, including Larry Schweinhart, Ph.D, Research Division Chair at the High Scope Educational Research Foundation, Gregory Powell, Ph.D., Chief of the Division of Research and Evaluation of the National Head Start Association and Timothy Nolan, Ph.D, author of "What Really Makes Head Start Work: Compassionate Partnering". Upon consideration of all the input we received, and upon close analysis of the study itself, we forward the following response.

We believe the study is not valid and should not be published as reflecting an appropriate evaluation of Head Start experience. From a research standpoint, the study does not represent results worthy of reporting because in quality research, a single major flaw in design negates the meaning of any results which might follow. (Nolan, 1998) This study has many major flaws. In the report's own words, the study uses a "quasi-experimental, post hoc design to examine selected measures of school readiness" (Appendix A, A-1) and the study appears to have stretched the concept of "quasi" well beyond the limits described by Cook and Campbell, leaders in the field of research methodology. (Powell, 1998)

The study even acknowledges it's own limitations, and yet goes on to present the findings as if the limitations of the study can be ignored. We do not believe the limitations can be ignored, nor do we believe that study should be presented as valid research on Head Start experience or achievement levels of Head Start children. On page 4 the study cites three principal limitations. These limitations are at the core of why the study should be considered invalid.

1. Defining the case study. The study is *only reflective of one community* with limited numbers of children representing the entire community. (Head Start children in Montgomery County feed into a large number of school districts in addition to the Dayton District) Such limited information CANNOT be a basis for the sort of generalization which this study has drawn. Further, the study states "over 70% of Ohio's Head Start dollars are allocated to similar urban settings throughout the state". Dayton's urban population and urban conditions cannot be generalized to compare to Cleveland, Cincinnati or Columbus, all of which are considerably larger than Dayton, and all of which have unique qualities which would negate the generalized comparison represented in the study.

2. Poverty Indicators. This study failed to control for poverty. Firstly, there is no reason to believe that the three groups evaluated - Head Start children, Title I children and "non" Head Start children with an unknown preschool experience are comparable on any other measure than the fact that they are all entering Kindergarten. Secondly, the study's assignment of a level of poverty which the census reports for the ZIP code where the child lives is flawed in it's application. There IS a variance in income levels within the five ZIP code areas identified in this study.

   Thirdly, the study estimates, using ZIP code adjustment for poverty, (from the 1990 census Data) that 26% of Title I children, and 26% of the "unknown" preschool children and 30% of Head Start children live in poverty. (Appendix A-4). This adjustment does not fit with the reality of enrollment at the time of the study (1996-96). By actual federal requirement (which also applies to state funded Head Start), 90% of all Head Start children must fall at or below the federal poverty index, so at least 90% of the Head Start children in this study fell below the poverty line. These same restrictions do not apply either to Title I children or necessarily to the "unknown preschool group". Further, the estimates using ZIP code adjustment for poverty substantially underestimates the poverty rates for Head Start, and these numbers cannot and do not adequately control for the effects of poverty.

   Also, it is critical to note that using just poverty levels alone as a variable does not capture the reality of Head Start children. Head Start children represent the poorest of the poor and in most cases, Head Start children come to their Head Start experience with other "at risk" factors which compound the problems already represented by poverty. These other factors include: single parent households, parental substance abuse, low maternal education levels, very young parent(s), poor nutrition, and poor health conditions. When poverty and the other "at risk" factors are combined, the child has considerably more to overcome to achieve school readiness than just those effects of poverty alone. The study does not address the levels of poverty from which Head Start children come, nor the additional risk factors found in Head Start children and families. (Powell, 98)

3. No baseline measures. The study admits there are no baseline measures for the children prior to enrolling in Head Start. This alone is enough to invalidate the findings by any standards used in a responsible research process. Without knowing the levels of child achievement prior to the preschool experience, any discussion of outcomes is meaningless. Because Head Start is responsible for serving children who are at the MOST risk, it is likely that the children in the Head Start group in this study were at considerably lower functioning levels on many (if not all) of the measures than the other groups, prior to their preschool experiences.
   Assuming that to be the case, then the study actually indicates that Head Start had a positive impact by helping these at risk children "catch up" to the other two groups by kindergarten. (Powell, 1998)

It bears noting that there appears to be a mismatch between the instrumentation available in this study and the purpose of Head Start. The Dayton Public Schools use a variety of screening tests at school entry. Their purpose is to identify potential problems, not to assess children's readiness to learn or the effects of Head Start or any other preschool program. (Schweinhart, 1998). Yet these tools have been used to both assess readiness and to evaluate the effects of Head Start. The goals of Head Start are to improve children's social competence, initiative and ability to solve day-to-day problems, traits that tests do not measure very well but that have a lot to do with long term benefits.

The fairness-of-comparison problem and the insensitive-instrumentation problem have dogged Head Start evaluations since the program began in 1965. Ohio's legitimate concern with program accountability is not well served by an evaluation that so obviously has these problems. (Schweinhart, 1998)

The study itself (Appendix C, C-1) identifies that focus on literary readiness alone is a weakness of their work. Overlooked by their own admission were parental support, motivation, self esteem, math abilities, cognitive and problem-solving abilities and overall physical health. The Head Start mandate is to work with the whole child and family. Failure to address these critical variables is a major area of concern for us and further supports our belief that the study is not a valid piece of research worthy of consideration. The study devotes a great deal of effort throughout, pointing out the limits of it's work. The fact that the study then proceeds to develop far-reaching, sweeping conclusions is very troublesome to the Head Start community. We therefore state, with conviction, that the study is not worthy of consideration as a means to evaluate Head Start's effectiveness.

As we reviewed the LOEO interpretations and recommendations, we were struck with the general negative tone of the work, and the absoluteness of the language used when data was interpreted. For example, *"The Head Start community does not give high priority to the cognitive and language skills children need to succeed in school" is an absolute statement, highlighted in bold print, and based on very little support data, and yet such sweeping language carries very negative impact to the casual reader.* This blatant statement is not universally true about Head Start across this state or any other state.

Recommendations made in the study were reviewed carefully by our constituents. The Head Start community both in Ohio as well as across the nation, is committed to being a learning community. Considerable funding, time and effort are put forth across this nation each year in the professional development of our staff and the quality improvement of our program. Head Start is known for these initiatives. Further, we welcome any appropriate suggestions and recommendations which would further enhance our opportunities for professional development and professional growth.

However, the suggestion that all Head Start teachers be licensed with a 2 year degree certification carries with it some major financial ramifications. The cost of this initiative would be extensive. At the present time, all Head Start programs have at least one CDA in each classroom, and many programs have staff with higher certifications/licenses. Continued professional development is an ongoing process for teachers and other staff within all Head Start programs.

The Head Start community in this state is seen as the "National Poster Child for Head Start Expansion", given our history of growth. Considering the general negative tone of the report. As we noted earlier, we include here some significant information about Head Start in Ohio. reflecting notable strengths and areas of continuous improvement.

The Head Start community in Ohio is collection of strong, unique, hardworking, dedicated and capable individuals and programs, able to meet any challenge set before them. Over the past 8 years, since the onset of state funding in addition to federal funding, the Ohio program has grown by over 232%. We have gone from federal funding in 1991 of $84,000,000 to a current figure - 1998, of $163,345,422 (Region V, 1998), and additional state funding of $92,600,000. In 1991 we were serving slightly more than 26,000 federal children and in 1998 we are serving 35,415 federal children, including 348 infants and toddlers, and the by September of this year we will be serving an estimated 24,824 (ODE, 1998) state funded children .

This is a total of $261,944,422 in total funding, and 60,239 children served. With this combined funding, Ohio stands second in the nation, only California is higher, in serving numbers of Head Start children.

In 1989 we were serving 29% of the Head Start eligible children in this state. Today we are serving over 85% of the Head Start eligible children. No other state is even close to this remarkable number.

This means that in the eight years since state funding began, the Ohio Head Start community has taken on an additional 34,239 children and an additional $178 million to our funding. This considerable growth, the largest and fastest in the nation we might add, translates to approximately 2,014 new classrooms and approximately 4,280 new staff. Further translated, this means an average of 252 new classrooms each year, or 3 and 1/2 classrooms per provider each year, AND, 535 new staff members each year. New staff require extensive training, orientation and attention. Too many new staff in a single program (one program in Ohio hired over 100 new teachers in one year - 1996 - because of increased state and federal funding increases) impacts the entire agency culture and ways of doing business.

All of the growth effecting Head Start has impacted the management systems and the organizational structure of each Head Start agency in the state, yet these programs have responded to ongoing expansion and change with energy and commitment.

It should also be noted, in response to some recommendations in the study, that:

- The Ohio Department of Education and the Head Start community are in constant contact about the ongoing status of the program, and have formed a positive and meaningful relationship through which the Department DOES provide leadership and guidance to the Head Start community.
- The Ohio Department of Education DOES provide Technical Assistance through a relationship with the Region Vb Quality Network and their network of senior consultants.
- Selected Head Start grantees have already been identified to foster the development of some school readiness measures. A pilot group of programs will begin intensive work this fall.

Another critical piece of information which speaks to the dedication and the diligent work of the Head Start community in Ohio: Ohio ranks fifth in the nation in both federal dollars and the number of children we serve with those federal dollars. We are highest in the nation out of 16 states or entities who provide additional funding, higher actually than all those entities combined, but it should be clearly noted that historically, Ohio has always been in the lowest quadrant of the federal funding range of average dollars per child. In 1998 Ohio ranked 46th out of the 56 entities which receive federal funding (all 50 states, Washington DC, The Outer Pacific, the Virgin Islands, Puerto Rico, American Indians and the Migrant Program). The average dollar per child figure for Ohio is $4,383, (Head Start Fact Sheet, February 1998, Head Start Bureau, Washington DC) **$500 less than the national average figure. When state funding is averaged into this figure, the funding per child is even lower. The other large states, California, New York, Texas and Illinois, all receive more funding per child than Ohio and with the exception of Texas, all receive over $5,000 per child.**

In addition to managing the growth and expansion initiatives in the past eight years with the levels of funding available to us, there have been other challenges to face. In 1996 the first federal revision of the performance standards was completed and these changes had to be blended into the operation of each Head Start program in the state. This has been a substantial change in the rules and regulations, which govern and guide the Head Start program operations, and each and every Head Start staff member in this state has been involved in re-learning the requirements of the program.

In 1996 and 1997 both state and federal initiatives have brought about over 500 substantial partnerships between Head Start programs and local child care providers. In essence, this initiative has created a new line of business for Head Start program operations.

We mention these opportunities and the challenges they have brought, to ensure that the readers understand the considerable work being done by the Head Start community in this state, and that our positive actions in the face of massive change speaks to the viability and the commitment of the Head Start community.

LOEO RESPONSE

It is the practice of the Legislative Committee of Education Oversight to include comments of agencies affected by LOEO studies in the final report. LOEO staff may add responses to agency comments to clarify specific issues. The agencies that provided comments on this report were the Ohio Department of Education (ODE) and the Ohio Head Start Association, Inc. (OHSAI).

LOEO appreciates the detailed comments provided by ODE and OHSAI. While we do not agree with all of their concerns, we acknowledge the professional leadership and assistance these agencies have provided for Ohio's Head Start programs. Their comments express well the considerable accomplishments of Head Start programs in Ohio over the last decade.

For example, OHSAI points to growth in funding of 232% in the last eight years, a period in which the number of eligible children served has increased from 29% to over 85%. As they describe, this rapid expansion has been challenging for Ohio's Head Start programs. It is to the credit of Ohio's Head Start community that many of the problems associated with rapid growth have been overcome. However, having accomplished this unprecedented expansion in the number of children served, it is now an appropriate juncture to give renewed attention to program quality by evaluating the program's impact and considering strategies for improvement. LOEO views its current study as a contribution to this agenda.

It is important to reiterate the study's perspective. LOEO has no reason to disagree with the overall merits of Head Start as a public response for helping children in poverty. In this and in our previous study of Head Start's implementation in Ohio, we describe the wide range of services provided for children and families.

Our findings speak to a small but important segment of Head Start's goals, namely, preparing children for the academic and social demands of school. Within this segment, we found that some of the objectives associated with literacy readiness and social competence are not being met. We conclude that Head Start classrooms are good places for children to be; they are caring and nurturing environments. Yet we think that Head Start teachers should focus more attention on the readiness skills that are essential for later school success.

LOEO's recommendations call for higher priority and more assistance for these academic and social objectives. By no means do we consider Head Start to be a failure. Nor do we view our findings as supporting such a conclusion or suggest that there be any less state or federal support in the future. Instead, we think there should be more attention paid to these particular program goals.

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LOEO offers the following response to the agencies' overall and specific concerns.

Overall Concerns

1) Validity of the study

Concern: The study's limitations are severe enough to invalidate all of the findings and conclusions.

LOEO Response:

All social science research has limitations. It is the researchers' responsibility to express such limitations, as LOEO has done in this study. The limitations to the study's design are common among respected studies of early childhood programs, including Head Start. We recognize that the study's findings represent only selected measures of program impact and that the findings may not apply to all Head Start programs. However, such cautions and limitations do not render a study invalid.

2) Baseline testing

Concern: Baseline tests should have been given before all the children were old enough to start preschool. Researchers should not undertake a study such as LOEO's without baseline measures.

LOEO Response:

To study the effects of social programs, researchers are often faced with the lack of baseline measures. This is extremely common in studies of early childhood programs over the last 30 years. In fact, many of the studies of Head Start recommended to LOEO by early childhood experts have the same retrospective design as this study. Recently the U.S. General Accounting Office examined over 200 reports on Head Start, looking for those they considered strong enough to measure the effects of the program. Of the 22 studies they accepted, 14 had the same design as this LOEO study. When a retrospective design has yielded findings favorable to Head Start, it has not been questioned by program advocates.

LOEO's research question asked how former Head Start participants perform on selected school readiness measures when they begin kindergarten in comparison to non-participants. Examining children's scores on readiness tests as they enter kindergarten is a legitimate way of addressing this research question.

3) Poverty data

Concern: The poverty data that LOEO used to compare Head Start children to other children ignores the fact that at least 90% of the Head Start students are poor. LOEO claims that only 30% of the Head Start children live in poverty.

LOEO Response:

This concern is a misreading of the study's analysis of poverty data. LOEO states in the report's introduction that Head Start children are poor. In fact, their family income has to be below the federal poverty threshold to be eligible for the program.

According to Dayton school officials, nearly *all* the kindergarten students are poor (83%). It would have been legitimate for LOEO to compare Head Start participants to all the other students, without taking into account *gradations* of poverty. However, to make the comparisons as fair as possible, we looked for additional measures that would show differences in the poverty levels among Dayton's predominately poor kindergarten students.

The best additional indicator available was the census report of poverty by the 31 Dayton area ZIP codes. We found that Head Start children live in ZIP code areas where, on average, 30% of all household incomes are below the federal poverty threshold, while the other children in the study lived in ZIP code areas where, on average, 26% are below this threshold. Because we used this *additional* measure of poverty, we were able to adjust the scores of the Head Start participants *upward* to account for their differences in poverty. In doing, so we made fairer comparisons among the groups rather than simply assuming the groups were equally poor.

4) Negative interpretation of findings

Concern: LOEO chose to interpret the central findings as negative, rather than positive. The fact that the Head Start children were equivalent to the non-participants upon entering kindergarten means that the program has been successful in bringing the Head Start children up to the level of these other children.

LOEO Response:

This is a misreading of the report. LOEO's central finding is that Head Start students score no better on the school readiness measures than comparable students who most likely did not have any preschool experience. The only way to interpret this as a "positive finding" is to claim that the purpose of Head Start is to bring participants' school readiness abilities to the same level of comparable non-participants.

In fact, before adjusting the scores for the differences in poverty, the Head Start participants actually scored *lower* than non-participants. It is because we used an additional measure to determine the differences in poverty that we were able to apply statistical adjustments to raise the Head Start scores. These higher scores were about equal to those of the non-participants.

LOEO did not "choose" to interpret the findings negatively. The findings indicate that the Head Start children do not score as well on selected measures of school readiness as one would expect program participants to score. Further, the LOEO report is clear in placing these selected measures in perspective: they are only a subset of all of Head Start's goals for children and families.

Specific Concerns

- *Inappropriateness of quasi-experimental design.* LOEO's study design clearly falls within the research principles that define a quasi-experimental design. To claim that the study stretches the definition of these principles is a misreading of the literature on research design.

- *Over-generalizing findings.* To generalize, with qualifications, to other urban areas in Ohio is not an overstatement of the applicability of the study's findings. We think that Dayton's kindergarten students can be seen as reasonably comparable to other urban kindergarten students in Ohio.

- *Sweeping, negative conclusions about Head Start.* LOEO's findings and conclusions are clearly qualified and delimited as applying only to the measures used in this study, namely, literacy readiness and social competency. It is accurate to claim that Head Start has additional goals that are not measured by this study. It is inaccurate, in our view, to suggest that LOEO can come to no conclusions unless these other goals are also measured. LOEO does not view Head Start in a negative light, nor is there a negative connotation intended in our interpretation that a higher priority should be given to the cognitive and language skills children need to succeed in school.

- *"LOEO has no ready explanation for its findings."* This is not an accurate quotation from the study. The phrase "no ready explanation" does not refer to explaining the findings of *this* study. Rather, it refers to why LOEO's findings might differ from other studies of Head Start.

- *Too many limitations; the study should be replicated.* LOEO expressed the study's principal limitations, thereby providing the reader with an appropriate context for interpreting the findings. We encourage replication and we note in Appendix A that the documented data sets are available to other researchers upon request.

- *Recommendation to increase teacher qualifications is unfounded.* LOEO does not conclude that teacher qualifications account for the results obtained. We raise the question of whether they might make a difference. The suggestion about increasing the teachers' qualifications is but one in a list of possible strategies that ODE might use in "...helping Head Start agencies better teach children the cognitive, language, and social skills necessary for school success."

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